

HMX™

Computer Access to Desktop over IP solutions



Extend your desktop any distance from the computer over standard TCP/IP using HMX Computer Interface Modules

The Avocent Desktop Area Network supports physical separation of computer and user anywhere within the limits of a LAN without compromising the desktop experience. The simple pair of Computer Interface Module and Desktop User Station allows for ease of installation and simple deployment.

Target computers can be connected to the Desktop Area Network using a number of different Computer Interface Modules depending on the type of peripherals that are to be supported. All Computer Interface Modules are hardware based and so require no software or drivers to be loaded on to the target computer and also making the modules independent of the type of computer or operating system (OS). This allows the solution to function with PC, Mac® or Sun® computers.

The Computer Interface Module provides an Ethernet connection to allow for connection to any regular TCP/IP network and to communication across the network to a Desktop User Station. The Computer Interface Module streams DVI video, CD audio, USB media and keyboard and mouse between the user and computer using SSL and is fully encrypted using 128bit AES. This ensures the highest quality user experience, with all the advantages of placing the computer in a remote secure location and zero impact on the hardware, OS or software of the computer.



The hardware based Computer Interface Module allows a computer to be accessed from anywhere on the network, without an impact on the target computer hardware or software and without compromising the user experience.

COMPUTER ACCESS NODE FEATURES

- **Full Hardware Solution.** All connections to the target computer are hardware, requiring no software to be installed or drivers loaded. This provides access to all computer peripheral ports regardless of the state of the OS or BIOS
- **DVI-I Video.** Connects to single or dual DVI-I or VGA port of the computer providing both digital and analog video support
- **CD Audio.** Connects to the analog audio ports of the computer
- **Dual USB Ports.** Connects to two USB ports on the computer to provide keyboard, mouse and USB 2.0 data from the remote user
- **Self Powered.** Draws all power from the USB ports requiring no external power supply
- **Ethernet Port.** Allows the computer and user to be situated anywhere on the 100 or 1000Mbps network with full routing of data across routers, switches and subnets
- **Encryption of Network Data.** 128bit AES encryption of all data passing between the computer and the network
- **Upgradable.** Based on an embedded Linux OS, the device is fully upgradable to allow for future feature enhancements

FEATURES / PERFORMANCE

- **Connections** - 2 x USB, 1 x DVI-I (supports digital and/or analog video), 1 x 3.5mm stereo speaker jack, 1 x 3.5mm mono microphone jack, 1 x RJ45 network
- **Network Speed** - 100 Mbps or 1 Gbps
- **Encryption** - SSL/AES 128 bit
- **Performance** - USB keyboard, mouse, mass storage devices, all other USB peripherals, stereo speakers 24bit 44kHz, mono microphone, video up to 1280x1024@60fps, 100Mbps or 1Gbps network

MECHANICAL

- **Format** - External self powered dongle
- **Height** - 0.87" (22 mm)
- **Depth** - 6.02" (153 mm)
- **Width** - 2.28" (68 mm)
- **Unit Weight** - 1.1 lbs (0.5 Kg)

ENVIRONMENTAL / POWER

- **Operating Temperature** - 32° (0°C) to 104°F (40°C)
- **Storage Temperature** - -4° (-20°C) to 122°F (50°C)
- **Power In** - 5VDC
- **Power Consumption** - 6W

STANDARDS

- **Approvals** - cUL, UL, CE, FCC15 Class A, VCCI



External Module Dual Video Specifications

FEATURES / PERFORMANCE

- **Connections** - 1 x USB, 2 x DVI-D (supports digital video only), 1 x 3.5mm stereo speaker jack, 1 x RJ45 network
- **Network Speed** - 100 Mbps or 1 Gbps
- **Encryption** - SSL/AES 128 bit
- **Performance** - USB keyboard, mouse, mass storage devices, all other USB peripherals, stereo speakers 24bit 44kHz, mono microphone, analog video up to 1600 x 1200@60fps, digital video up to 1920x1200@60fps, 100Mbps or 1Gbps network

MECHANICAL

- **Format** - External Metal cased Module
- **Height** - 1.10 in (28 mm)
- **Depth** - 7.87 in. (200 mm)
- **Width** - 5" (127 mm)
- **Unit Weight** - 1.65 lbs (.75 Kg)

ENVIRONMENTAL / POWER

- **Operating Temperature** - 32° (0°C) to 104°F (40°C)
- **Storage Temperature** - -4° (-20°C) to 122°F (50°C)
- **Power In** - 5VDC
- **Power Consumption** - 6W

STANDARDS

- **Approvals** - cUL, UL, CE, FCC15 Class A

HMX™ 1050/2050

User Stations for Desktop over IP Solutions



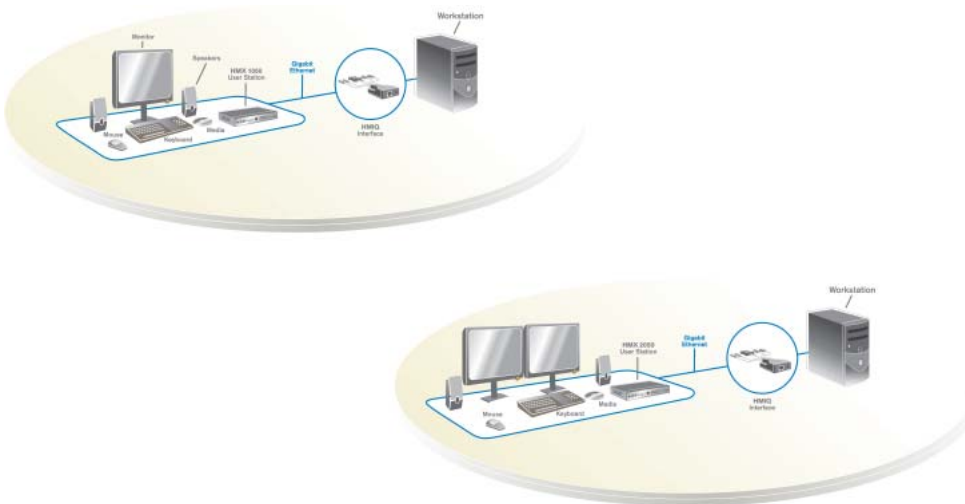
Extend your desktop any distance from the computer over standard TCP/IP using HMX Desktop User Stations

The Avocent Desktop Area Network supports physical separation of computer and user anywhere within the limits of a LAN without compromising the desktop experience. The simple pair of Computer Interface Module and Desktop User Station allows for ease of installation and simple deployment.

User peripherals can be connected to the Desktop Area Network using a number of different Desktop User Stations, depending on the type of peripherals that are to be supported and the preference for desk or monitor mount implementations.

All Desktop User Stations are hardware based and require no software, operating system (OS) or disk at the user desk while providing connection for DVI video, CD audio, USB mass storage and keyboard and mouse. This allows the user to have full access to all of the functions of the remote computer without having the computer on his or her desktop.

The Desktop User Station provides an Ethernet connection to allow for connection to any regular TCP/IP network and communication across the network to a Computer Interface Module. The Desktop User Station receives streamed DVI video, CD audio, full USB 2.0 and keyboard and mouse from the computer using SSL and is encrypted using 128bit AES. This ensures the highest quality user experience, with all the advantages of placing the computer in a remote secure location and zero impact on the hardware, OS or software of the computer.



The hardware-based user station allows a computer to be accessed from anywhere on the network, without the need for software, an OS or disk at the user desk area and without compromising the user experience.

USER ACCESS NODE FEATURES

- **Full Hardware Solution.** All connections to the user desktop peripherals are provided without the need for software, OS, disk or fan
- **DVI Video.** Connects to single or dual DVI or VGA monitors on the user desktop
- **CD Audio.** Connects to the analog speakers on the user desktop
- **Quad USB Ports.** Provides connection for four USB devices including keyboard, mouse, mass storage device and any other USB device
- **Dual PS/2.** Provides connection for legacy PS/2 keyboard and mouse. (Single video desktop only)
- **Ethernet Port.** Allows the computer and user to be located anywhere on the 10, 100 or 1000Mbps network with full routing of data across routers, switches and subnets
- **Encryption of Network Data.** 128bit AES encryption of all data passing between the computer and the network
- **Upgradable.** Based on an embedded Linux OS, the device is fully upgradable to allow for future feature enhancements
- **Flexible Mounting.** Small form factor can be used on a desk, mounted directly to the back of a monitor or inside the display device

FEATURES / PERFORMANCE

- **Connections** - 2 x PS/2, 4 x USB, 1 x DVI-I, 1 x stereo speaker socket, 1 x mono microphone socket, 1x RJ45 network
- **Network Speed** - 100 Mbps or 1 Gbps
- **Encryption** - SSL/AES 128 bit
- **Performance** - PS/2 / USB keyboard & mouse, mass storage devices, all other USB peripherals, stereo speakers 16bit 44kHz, mono microphone, video up to 1280x1024@60fps, 100Mbps or 1Gbps network

MECHANICAL

- **Format** - Desktop mounting metal case with external power supply
- **Height** - 1.2" (30 mm)
- **Depth** - 5.2" (132 mm)
- **Width** - 8.5" (210 mm)
- **Unit Weight** - 2.2 lbs (1 Kg)

ENVIRONMENTAL / POWER

- **Operating Temperature** - 32° (0°C) to 104°F (40°C)
- **Storage Temperature** - -4° (-20°C) to 122°F (50°C)
- **Power In** - 100-250VAC @ 1.2A
- **Power Consumption** - 8W

STANDARDS

- **Approvals** - cUL, UL, CE, FCC15 Class A, VCCI

Desktop Dual Video Specifications

HMX 2050

FEATURES / PERFORMANCE

- **Connections** - 4 x USB, 2 x DVI-D, 1 x stereo speaker socket, 1x RJ45 network
- **Network Speed** - 100 Mbps or 1 Gbps
- **Encryption** - SSL/AES 128 bit
- **Performance** - USB keyboard & mouse, mass storage devices, all other USB peripherals, stereo speakers 16bit 44kHz, analog video up to 1600 x 1200@60fps, digital video up to 1920 x 1200@60fps, 100Mbps or 1Gbps network

MECHANICAL

- **Format** - Desktop mounting metal case with external power supply
- **Height** - 1.10 in (28 mm)
- **Depth** - 6.06 in. (154 cm)
- **Width** - 8.19" (208 mm)
- **Unit Weight** - 2.09 lbs (.95 Kg)

ENVIRONMENTAL / POWER

- **Operating Temperature** - 32° (0°C) to 104°F (40°C)
- **Storage Temperature** - -4° (-20°C) to 122°F (50°C)
- **Power In** - 100 - 250VAC @ 1.2A
- **Power Consumption** - 1W

STANDARDS

- **Approvals** - cUL, UL, CE, FCC15 Class A

HMX™ Manager

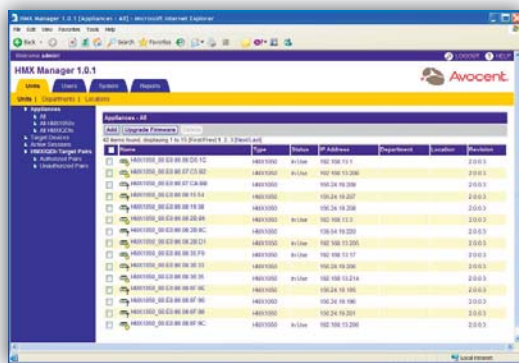
Centralized administration of all HMX series
Desktop over IP components



Provide Administration of all HMX components from one centralized console

The Avocent Desktop Area Network supports physical separation of computer and user anywhere within the limits of a LAN without compromising the desktop experience. The simple pair of Computer Interface Module and Desktop User Station allows for ease of installation and simple deployment. The Administration Node provides administration and connection management for Avocent HMX system components along with a rich suite of access profiles and internal authentication.

The HMX Manager is delivered as a hardened appliance with secure browser-based access. The HMX Manager can be connected to two simultaneous networks; one network to be used for deployment of the HMX system and the other for the systems administrator to access the system from the LAN using any network PC.



The HMX Manager provides administration, authentication and connections broker features to all HMX components from one console and one management database.

CONNECTION MANAGER BENEFITS

- **Central Administration.** Allows Desktop Over IP solutions to be managed from one central console
- **Central Authentication.** Provides one database for management of all user authentication using an internal database
- **Logging and Reporting.** The HMX Manager provides logs of all system and user events, allowing the desktop administrator to provide detailed reports of computer usage and user activity
- **Desktop Pooling.** Users can be assigned a computer from a pool of similar function computers, allowing the computer to be used and then returned to the pool for general use
- **Secure Access.** SSL communication and secure authentication guarantee that access to any computing resource is managed securely from one location
- **Service or Appliance Based.** All the features of the HMX Manager are provided as a 'lower maintenance' dedicated appliance

Specifications

HARDWARE

- **Memory** - 2 GB RAM
- **Storage** - 80 GB SATA hard drive, 7200 rpm
- **Interfaces** - 2x1 Gigabit Ethernet ports
1x RS-232 serial console port

MECHANICAL

- **Height** - 1.7 in. (4.3 cm)
- **Width** - 16.8 in. (42.7 cm)
- **Depth** - 14 in. (35.6 cm)
- **Unit Weight** - 15 lb. (5.9 kg)

ENVIRONMENTAL / POWER

- **Operating Temperature** - 52° (0°C) to 95°F (35°C)
- **Storage Temperature** - -31° (-35°C) to 158°F (70°C)
- **Humidity** - 10 to 90% non condensing
- **Power In** - 260 W universal

STANDARDS

- **Approvals** - FCC Class B
EN 60950/IEC 60950
UL Listed (USA)
CUL Listed (Canada)
TUV Certified (Germany)
CE Marking (Europe)

Features

CONNECTION BROKER

The Connection Broker Module provides automated management of the connections between authenticated users and their allocated computers with the following available features

- **User profiles** - This feature allows the administrator to create a profile for each user that is applied to each user's access session each time the user logs into the desktop client. This profile controls which computer is allocated to the user.
- **Connection Modes** - After a successful log in, users can be connected to their computing resources in desktop mode. This mode gives a user access to one dedicated computer
- **Computer Pooling** - This feature allows the administrator to allocate a number of computers to a resource pool and have users access the next available computer in that pool each time they log in.

AUTHENTICATION

The Authentication Module provides the facility to verify user credentials each time they log in at a desktop client. This authentication module has the following main feature:

- **Internal Authentication** - This feature allows the administrator to create an account for each user specifying the user name and password for that user. This account data is stored in an internal database that is held securely within the appliance.

SECURITY AND CONTINUITY

The Desktop Connection Manager provides several layers of security, which guarantees that each user access session is only granted once all security criteria have been fulfilled.

LOGGING AND AUDIT

The Logging and Audit Module provides a log of all system events and allows the administrator to compile reports based on these logs.

- **Events Logged** - The Logging and Audit Module provides logs of all system events and user events including:
 - User login, logout and computer chosen
 - User authentication success or fail
 - Power status, firmware status and system alarms for each of the system hardware elements
- **Reporting Formats** - Reports can be created in Microsoft Excel or csv formats for import into any industry standard reporting tools.

