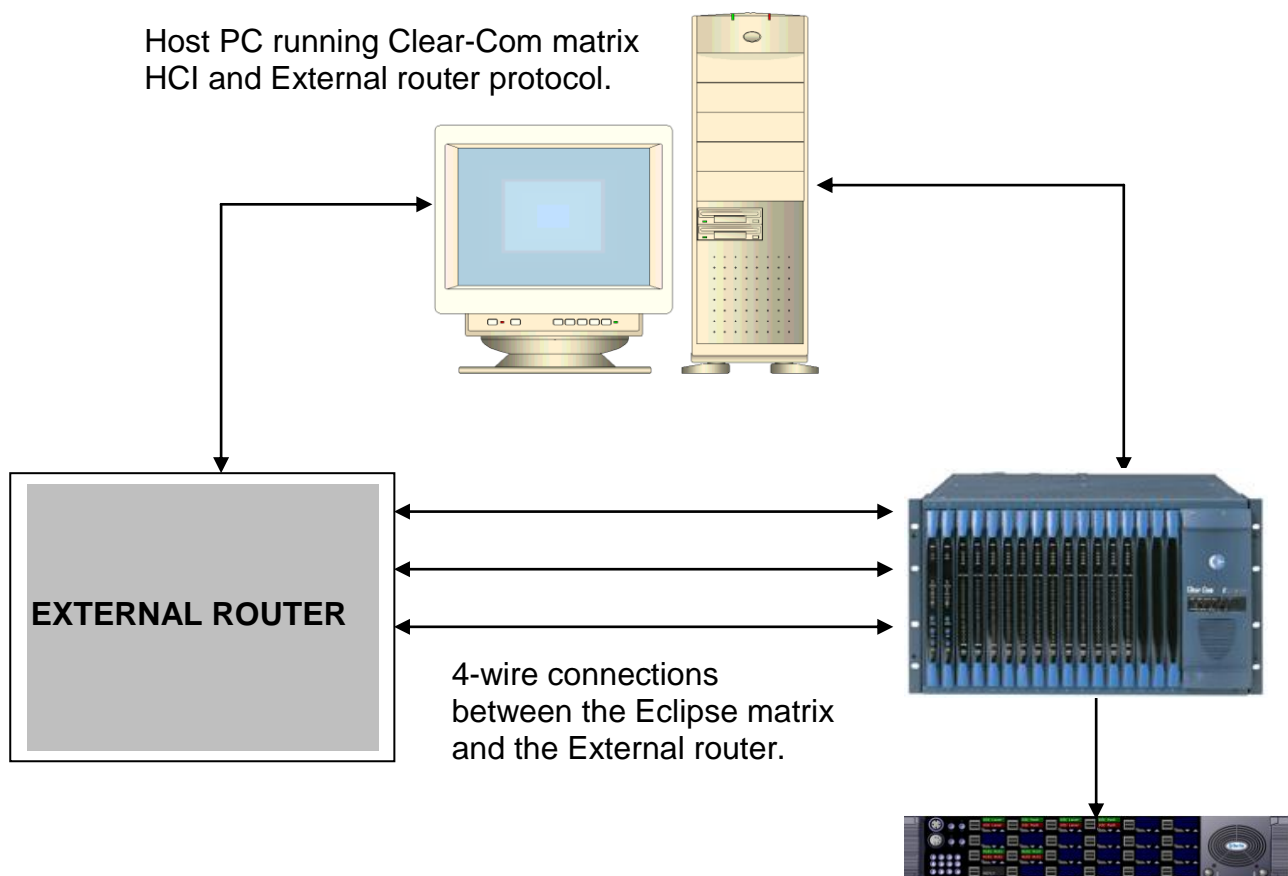# Overview of Clear-Com HCI

HCI (Host Computer Interface) is an open protocol that allows an (external) Host PC, Automation software or router control software to manage the audio switching functions and system monitoring features found in ECS. Any of the Eclipse matrices including the E-Pico can support HCI.

The HCI interface has been used widely by broadcasters in MCRs installations and studios to integrate the control of the Eclipse matrix and other equipment like Video, Audio switchers, mixers & VT machines all onto a single Host PC.

In the Defence & Simulation market, HCI has been used widely in all types of tactical trainers and command & control systems.

TYPICAL HOST CONTROL OF A ECLIPSE MATRIX SYSTEM

Host PC running Clear-Com matrix HCI and External router protocol.

EXTERNAL ROUTER

4-wire connections between the Eclipse matrix and the External router.

The Host PC receives routing information from the external router and translates this into the appropriate matrix HCI commands that are required to follow the external router actions.

Similarly, the Host PC receives routing information from the Eclipse matrix and translates this into the appropriate external router commands.

The HCI protocol allows for the following commands to be sent or received from the matrix.

The protocol is structured so that all request messages from the Host have a corresponding reply message from the matrix.

Crosspoints: -
- The Host may request for crosspoints to be made or unmade (deleted)
- The Host may request for crosspoints to be inhibited
- The Host may request the status of a particular crosspoint (a list of panels and 4wires that are talking or listening to that port)
- The Host may request a list of all the crosspoint actions that it has sent.

➢ The matrix automatically sends a message when a crosspoint changes state.

Conferences: -
- The Host may request for panels or 4-wires to be added to or deleted from a conference as a talker or a listener
- The Host may request for the status of a conference (a list of panels and 4wires that are members of that conference)
- The Host may request a list of all the conference actions that it has sent.

➢ The matrix automatically sends a message when a panel or 4wire joins or leaves a conference
➢ The matrix can list all the members of a conference in terms of talkers and listeners.

Control action (virtual key): -
- The Host may request for a control action to be turned ON or OFF.
- The Host may request for status of a control
- The Host may request a list of all the control actions that it has sent.

➢ The matrix automatically sends a message when a control changes state.

Audio levels: -
- The Host may request for a change to matrix input level
- The Host may request for a change to matrix output level
- The Host may request for a change to crosspoint levels
- The Host may request the current crosspoint level of a particular panel or 4wire.
- The Host may request a list of all the crosspoint levels actions that it has sent.

➢ The matrix automatically sends a message indicating when there is a change in the Matrix I/O level or a crosspoint level.

IFBs
- The host may assign new sources, destinations to IFBs
- The host may change the interrupt (dim level) of an IFB
- The host may change the priority level of any talker on the IFB
- ➢ The matrix automatically sends a message indicating when an IFB has been changed or when somebody is talking over an IFB.

Trunk lines
- The host may request for a trunk route to be made between two networked matrices
- The host would specify the local panel and also the remote matrix and panel or 4wire that it wishes to make a route to.
- ➢ The matrix automatically sends a message indicating when an trunk call has been made

System messages: -
The matrix can produce textual diagnostic and status messages.
- The Host may request system status messages to be sent.
- The Host may request the CPU firmware version.
- The Host may remotely reset the matrix.

- ➢ The matrix automatically sends a warning message when a matrix card or a control panel has goes on-line or off-line.

The Host can communicate with the matrix over the Ethernet link. Several Host PCs may communicate with the matrix at the same time

When a customer orders HCI, Clear-Com provides:
- ❑ Reference manual,
- ❑ A diskette of C++ library commands
- ❑ NetSim (an Engineering test tool for exercising the matrix system using HCI)
- ❑ Technical support (either one day at the factory with an engineer or 8 hrs telephone support)