

Optimizing the Man-Machine Interface

Robert Molloy, President
CyberResearch, Inc. Branford, CT USA

Presented at the Sciencetech Symposium
Clearwater Beach, Florida

January 18th, 2012

Optimizing the Man-Machine Interface with custom built-to-order components.

It's an important time saving and cost effective technique for meeting the challenges facing engineers tasked with real-time data capture and archival of plant information in an ever changing world.

CyberResearch

Branford, Connecticut USA

Company Background

- CyberResearch, Inc. Founded 1983
- Manufacturing Facility: 25,000 square feet located in the Branford Business Park near New Haven, CT.
- CyberResearch pioneered the adoption of add-on PC enhancement products by industry for data acquisition and instrumentation applications. The company promoted the sale of PC based industrial computers, displays and data acquisition systems with the “IBM PC Enhancements Handbook for Scientists and Engineers”. First published in 1983
- Over 10,0000 customers to date including: A majority of the Fortune 1000 companies, government agencies, and universities.

CyberResearch

Branford, Connecticut USA

Product Overview



Displays



Panel PCs



Fold Away KVM



Portable PCs



PC Systems



MicroBox PCs



CPU Cards



Keyboards



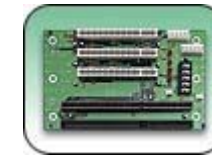
Data Acquisition



Digital I/O (DIO)



Analog Output



Terminal Panels

CyberResearch Nuclear Power Industry Projects PARTIAL LIST

Year	Site	#	Products Supplied
2006	Wolf Creek , KS	1	Custom LCD's & Mounting Assy's
2006	Susquehanna, PA	5	Custom LCD's, Sled Mounted Panel PC's. Demodulator Cards & TRA Custom Rack mount Power supplies
2007	Clinton, IL	4	Custom LCD's & Mounting Assy's Custom I/O Cables
2008	Quad Cities, IL	2	Custom Overhead LCD's, Relay, I/O Panels & Adapter Cards
2009	Millstone, CT	2	Custom LCD's & Mounting Assy's, Cables & I/O Adapter Cards
2009	Hope Creek, NJ	3	Custom LCD's & Mounting Assy's, Cables & I/O Adapter Cards, Keypads.
2010	Byron & Braidwood, IL	4	Custom Large Format Overhead LCD's, Relay & I/O Panels, Adapter Cards & Cables
2010	Fukushima, JPN	1	RTP 8000 dust covers
2011	Calvert Cliffs, MD	1	Custom Large Format Overhead LCD's
2011	DC Cook, MI	1	Custom LCD's & Mounting Assy's
2011	DC Cook, MI	1	Custom Data Acq - Signal Cond. , Surge Suppression. I/O Adapter Cards

CyberResearch

Branford, Connecticut USA

CyberResearch works closely with Sciencetech to develop custom built-to-order components to optimize the man-machine interface.

The Nuclear
Power Industry



***CURTISS
WRIGHT***
Flow Control Company
SCIENTECH



CyberResearch
Branford, Connecticut USA

Optimizing the Man-Machine Interface with:



CyRAQ®

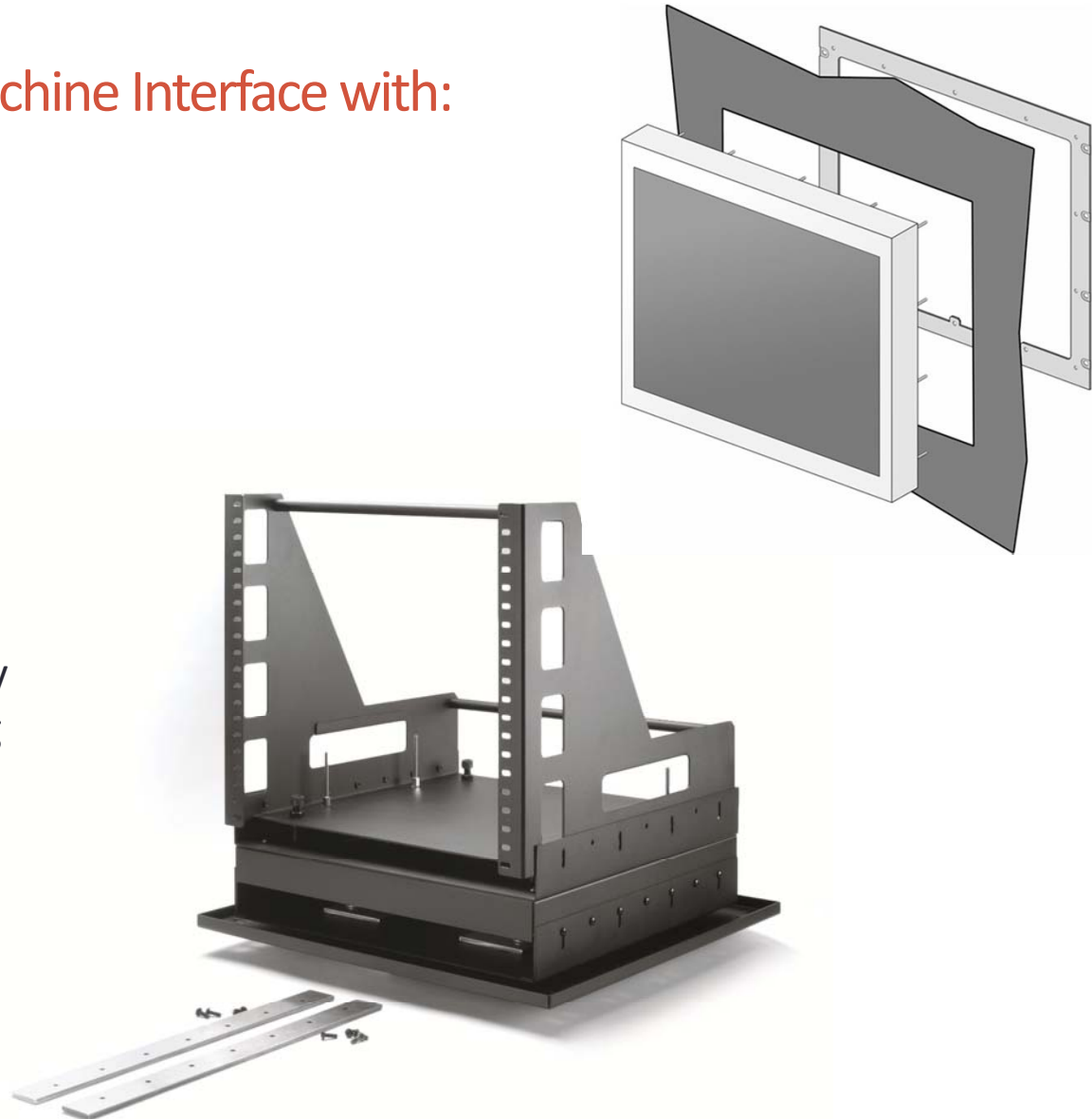


Custom Flat Panel LCD Displays

Optimizing the Man-Machine Interface with:

Custom Mounting Configurations for Flat Panel LCD Displays

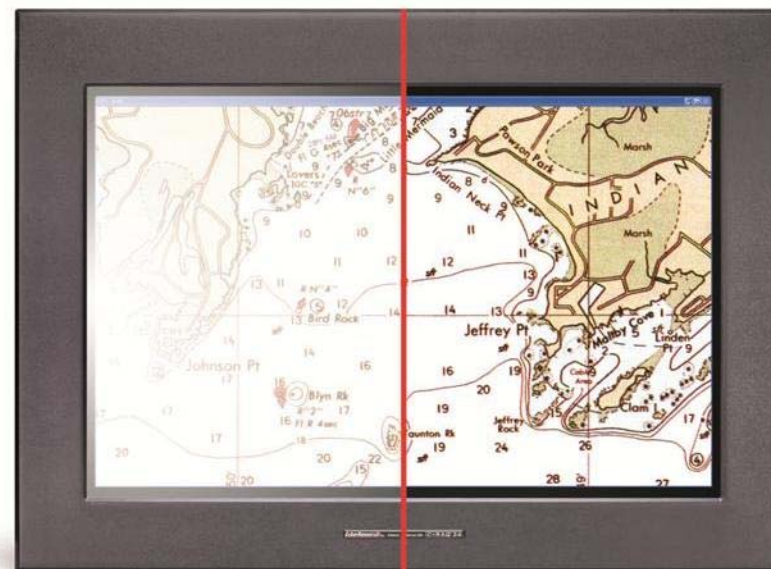
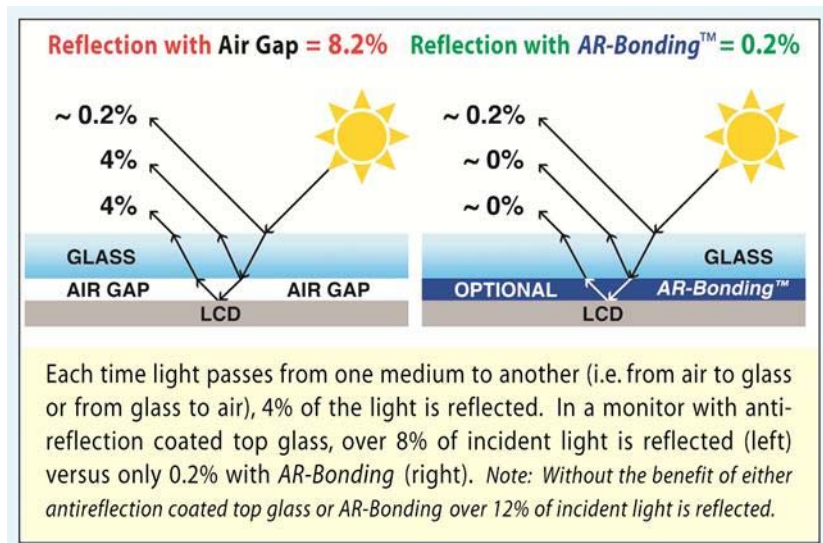
It began with straight forward bezel modifications, but complications created by the prohibition from resizing or reshaping the original opening in the panel required the fabrication of seismically qualified LCD's & mounting assemblies.



Optimizing the Man-Machine Interface with: AR-Bonding™ eliminates reflections from florescent lights on LCD Displays

Our proprietary AR-Bonding™ anti-reflection display enhancement dramatically reduces reflections which can occur under high ambient light viewing conditions.

COTS & MOTS



Optimizing the Man-Machine Interface with:

**Custom Waterproof NEMA 4 membrane keypads
Foldaway KVM's & rugged metal keyboards**



Optimizing the Man-Machine Interface with:

Rugged solid-state micro PC (no internal moving parts)

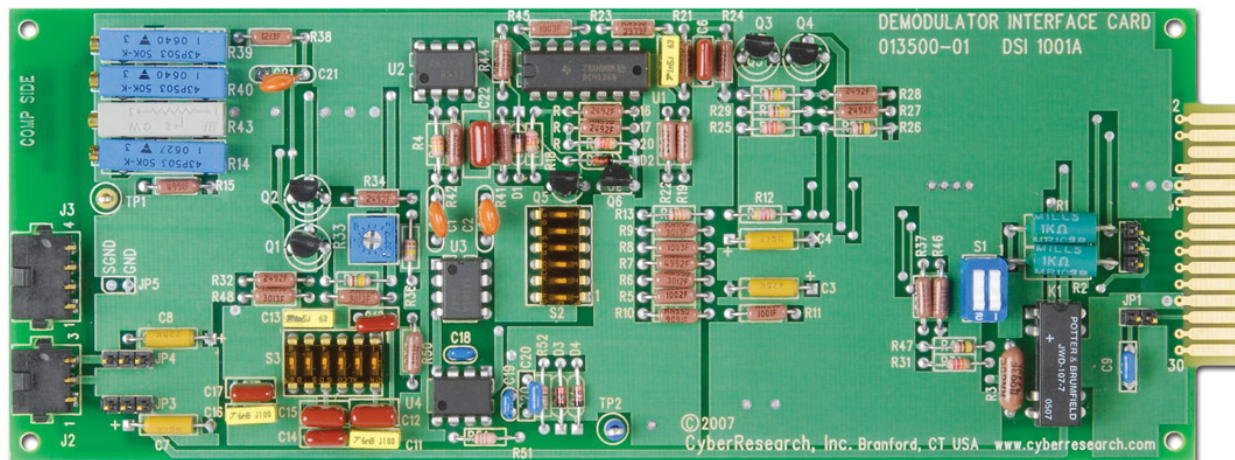
This “small form factor” PC has no moving parts internally. The external cooling fan can be replaced without shutting the PC off. Note: the copper heat sink allows for 140°F operation.



Optimizing the Man-Machine Interface with:

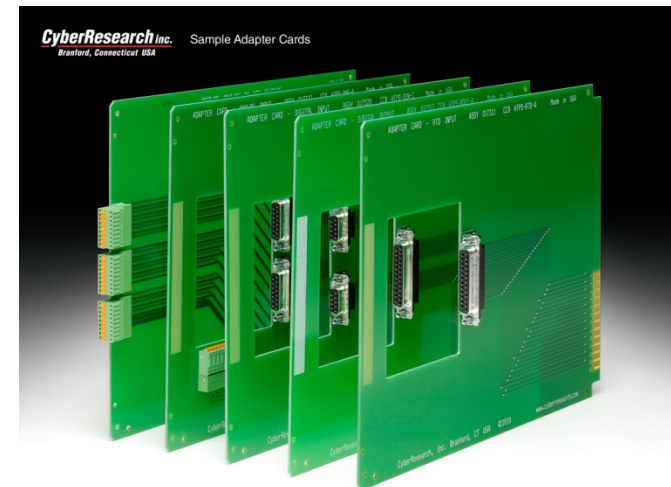
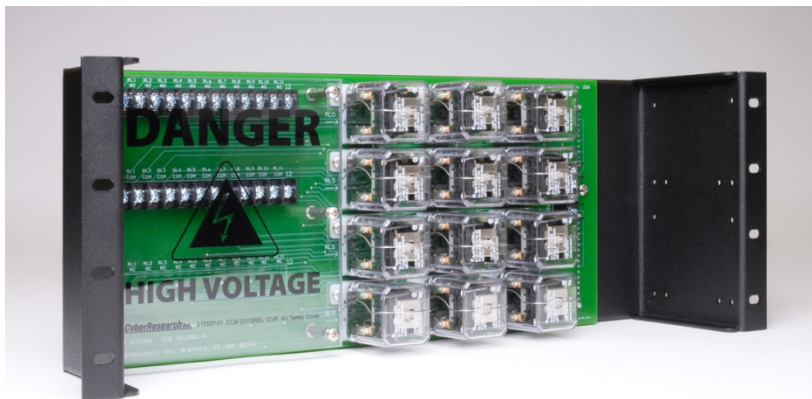
Replace hard-to-find obsolete components with modern functionally equivalent

There is an occasional need to replace an old, out of date and unavailable product. Vital but seeming impossible to find. We can design an equivalent replacement often with upgraded functionality for use in conjunction with a modern control system.



Optimizing the Man-Machine Interface with: Data Acquisition Systems, Signal Conditioning, Relay Panels and I/O Adapters Cards.

To facilitate the installation of new data acquisition equipment while leaving existing field wiring unaltered, we custom manufacture I/O cards, chassis & relay panels saving the customer both time and money by eliminating the need to re-terminate and re-document replacement of field wiring.



Optimizing the Man-Machine Interface with:

Innovative Cable Solutions.

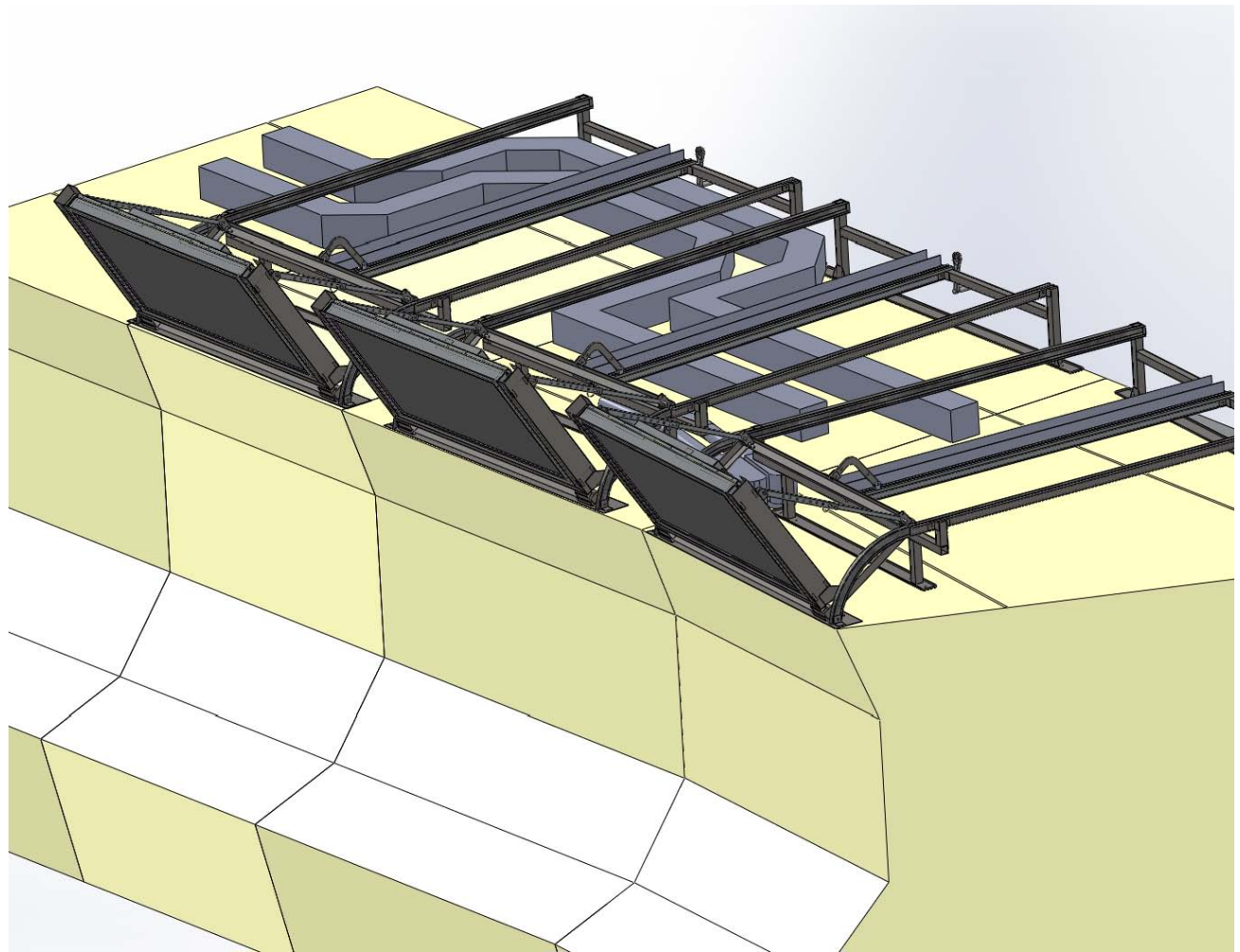
We can provide both prototype & production runs of IEEE 383 fire resistant cable in lengths to suit project requirements. We also manufacture custom back shells to allow proper cable routing. We also can provide ultra-reliable spring latch connectors.

CyberResearch inc. Sample Cable Set
Branford, Connecticut USA



Optimizing the Man-Machine Interface with:

Large format overhead
LCD Displays.



Lessons Learned

Engineering design challenges are like the tip of the iceberg - 80% of the problem is hidden under the water. When developing a new design concept, remember to set aside a sufficient contingency from a time and budget perspective to be able to deal with unforeseen issues that predictably appear.

The best solution will often command a premium purchase price. When making procurement decisions, remember to take into account the total lifetime cost of ownership. In the long run, the best solution may also prove to be the least expensive.

Do you have unmet needs that we might be able to help you with?

On Friday morning at 9:45 AM, an attendee roundtable has been scheduled where you will have a chance to tell Scienteck about your future application requirements.

As a solution provider working with Scienteck, CyberResearch is looking forward to having an opportunity to partner with you to develop the custom built-to-order components and system solutions necessary to optimize your man-machine interface.

