



## Capability Overview

# Who are CHH?



## CHH manufacture product and design solutions which encompass

- ▶ Cable assembly concept, design and manufacture
- ▶ Box build
- ▶ Rack integration
- ▶ Process audit and redesign
- ▶ Electro-mechanical integration and testing
- ▶ Value added engineering
- ▶ Supply chain solutions
- ▶ Logistics

### CHH Mission statement:

***To provide bespoke engineered solutions for the design and manufacture of cable assemblies, integrated products and logistics services in our chosen markets.***

CHH – working with clients across the Telecoms, Aerospace, Defence, Security, Transport, Medical, Energy and Industrial sectors.

# Engineering Excellence

Environment: Wireless Communications / Application: Microwave Technology



## Customer Testimonial

*“CHH were the only UK company who fully understood our urgency and requirements and were able to deliver a test ready cable within 3 weeks, which meant that we could start the roll out of our 15,000 sites. In addition since the start of the project 3 years ago there hasn't been a single failure. Potential failures could cost anywhere from £2,000 to £20,000 per site.”*

## Customer Problem:

- ▶ Customer was not able to close the door of the telecoms rack, due to cable routing issues and the size of the cable bundle.
- ▶ Without the cable, the project for over 5,000 sites could not start, resulting in a potential revenue loss of £30,000 per site.

## CHH Solution:

- ▶ CHH designed a unique connector to route the cable assembly through 180 degrees, allowing the mating of the connector in a considerably smaller space.
- ▶ Integrity of the signal was preserved.

## Customer Benefits:

- ▶ CHH solution designed and prototyped in 2 weeks, volume production in 5 weeks.
- ▶ Rack door closed securely.
- ▶ Installation of the cabling and engineer waiting time reduced by 25%.
- ▶ Project slippage was avoided.
- ▶ Customer programme delivered on time within 6 weeks.
- ▶ Total resilience: zero failures in 3 years (9,000 cables supplied).

# Engineering Excellence / Lifecycle Extension

Environment: Data Centre / Application: Data storage



## Customer Testimonial

*"The story behind the cables you created is a good one, because we had used so much energy, money and testing searching all over the world. I think we tested all the bigger cable manufacturers, and none were able to get a solution, until you came up with a new invention."*

## Customer Problem:

- ▶ Customer had a device which was limited to transmitting at 125Mhz, because of cable performance.
- ▶ The equipment needed to operate at greater than 200Mhz, otherwise the product would not perform to the required standard. Products which the cable was connected to were under performing.

## CHH Solution:

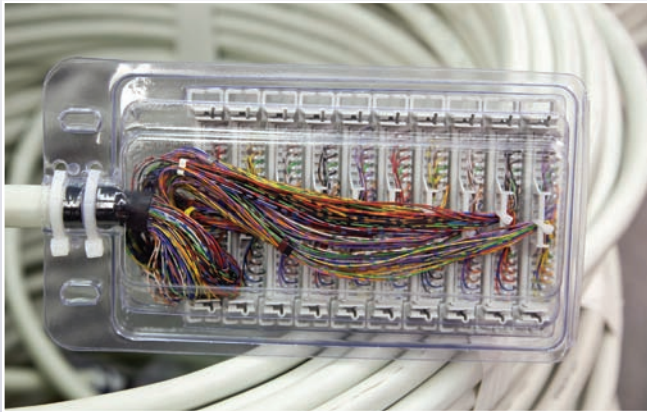
- ▶ A customer site visit was arranged to see the device in action and fully understand requirements.
- ▶ After studying the cable constraints, the answer was to get the twisted part of the cable closer to the connector by 16mm.
- ▶ Bespoke tooling was designed to enable the cable to communicate at 200Mhz rather than 125Mhz.
- ▶ A bespoke backshell was designed for more efficient assembly.

## Customer Benefits:

- ▶ The existing product life was extended by 4 years enabling entry into new markets.
- ▶ Performance was enhanced to 200Mhz.
- ▶ Costs were reduced by 15% as the need for functional test by the customer was removed.

# Process Review / Project Management / Cost Reduction

Environment: Fixed Line Telephony / Application: Voice/High speed broadband transmission



## Customer Testimonial

*“CHH’s partnership approach to working with our engineering team on process audit delivered great benefits. Collectively we managed to achieve increased output, improved quality and optimised total cost of acquisition by redesigning the process to better align activities with appropriate resources, in the right environment at the right time. An excellent outcome.”*

## Customer Problem:

- ▶ Customer needed 2 engineers for every installation to complete the test regime.
- ▶ Engineers working in difficult conditions such as poor light, at height or in congested cable runs.
- ▶ On site termination was taking 2 hours per cable (between 2 and 10 cables per site).

## CHH Solution:

- ▶ The customer’s installation site was visited to observe activities and conduct a process review.
- ▶ Product and process improvements were identified and introduced to eliminate the need for the second engineer.
- ▶ The solution meant that one end was factory terminated and could be plugged in immediately on site.

## Customer Benefits:

- ▶ Annual on site engineering savings of £594,000 were achieved. Net cash savings of £227,520 achieved.
- ▶ Sites were fully installed and commissioned by one engineer instead of two engineers.
- ▶ Increased capacity by releasing 16,500 senior engineering man hours.

# Risk Reduction / Problem Solving / Project Management

Environment: NHS Hospital / Application: Patient entertainment units



## Customer Testimonial

*“Having experienced a serious failure in a safety critical environment, CHH provided a technical solution together with an aggressive roll out plan. Both the solution and the corrective action programme were implemented in a cost effective and efficient manner.*

*Their in-depth product knowledge and understanding of the accessibility constraints made them the ideal partner to undertake the implementation and management of the entire programme.”*

## Customer Problem:

- ▶ Patients were using the cable to pull themselves up in bed. The TV could have become detached from the supporting arm, resulting in the possibility of patient injury.
- ▶ Risk that customer's product deemed unsafe and unusable.

## CHH Solution:

- ▶ Within 2 weeks CHH identified that the screen to arm mechanical connection relied on a single 3mm pin.
- ▶ 2 weeks later a safety mechanism was developed, preventing the screen becoming detached from the arm.
- ▶ Project management of 60,000 repairs at 144 NHS hospitals over a 4 month period.

## Customer Benefits:

- ▶ Customer avoided health and safety issues and a loss of revenue.
- ▶ Return to base repair costs saved.
- ▶ Major redesign costs avoided.

# Product Engineering / Cost Reduction / On Time Delivery

Environment: Wireless Communication / Application: Signal switching and distribution



## Customer Testimonial

*“CHH provided a very quick and rapid solution in reverse engineering the patch panel and custom made cables to enable roll out plans to be maintained with this cost effective solution.”*

## Customer Problem:

- ▶ New customer needed an interface panel manufactured and delivered for offshore installation within 3 weeks.
- ▶ The only available solution was on a 10 week lead time at a cost of £800 per unit.

## CHH Solution:

- ▶ Interface panel reverse engineered to remove 75% of the unnecessary costs.
- ▶ Supply chain excellence delivered through:-
  - PCB design/layout
  - Component specification and sourcing
- ▶ Creation of:-
  - Metalwork fabrication drawings
  - Metalwork sourcing

## Customer Benefits:

- ▶ A 75% sustainable cost saving was achieved (£120,000 on first order).
- ▶ Customer delivered against their schedule on time and in full.

# Intelligent Stock Control / On Time Delivery

Environment: Field Engineering / Application: Logistics



## Customer Testimonial

*“By working in partnership with CHH and ByBox we were able to introduce an innovative, efficient online ordering system, reduce our stock holding, improve traceability and tracking and most importantly get the right components to our engineers on time and in the right place. Overall we saved £1 million”*

## Customer Problem:

- ▶ Incorrect quantities of components were being shipped to site, preventing engineers from completing projects.
- ▶ This meant a wood screw priced at 2p, became a 47p screw, when additional labour, logistics and engineer downtime were added on.
- ▶ The wood screw was one of 2000 items for the exchange based telecoms product which had huge implications for overall project costs.

## CHH Solution:

- ▶ Redesigned the processes.
- ▶ Created an intelligent online stocking solution, within 6 weeks. Partnered with ByBox to provide the secure and reliable delivery routes and locations.
- ▶ Rolled out and fully operational within 10 months.

## Customer Benefits:

- ▶ Engineers empowered to self order components.
- ▶ Full tracking and traceability.
- ▶ Labour savings of £200,000.
- ▶ Cost of failure (wasted time) savings £500,000.
- ▶ Transport cost savings £250,000.

# Demand Spikes / Delivery, Cost And Process Improvements

Environment: Fixed Line Telephony / Application: Multiplexing



## Customer Testimonial

***“.....our customer needed a fourfold ramp in demand through Quarter Three and Quarter Four – in minimal lead time. CHH responded immediately, set up new work cells and a supply chain within two weeks and enabled us to meet our customer’s programme schedule seamlessly. They were thoroughly professional and helpful throughout.”***

## Customer Problem:

- ▶ There was a 400% increase in demand, commencing within 2 weeks.
- ▶ Additional requirements for floor space, engineering capacity and manufacturing hours.

## CHH Solution:

- ▶ Able to take delivery of the cabinets and store them at short notice.
- ▶ Following a full process audit material wastage was reduced, improved rack dressing designed to reduce engineering time at the exchange.
- ▶ Replicated customer processes and quality controls.
- ▶ Transfer of processes to the shop floor, provided greater quality control, cost effectiveness, standardisation and repeatability.
- ▶ Option for pre-test to reduce risks and improve quality.

## Customer Benefits:

- ▶ 800 cabinets were completed on time over a 4 month period.
- ▶ Equipment now in place for programme roll out over next 3 months.
- ▶ Flex their capacity resources by 100%.
- ▶ Improved quality control – by transferring processes to the shop floor. Greater control, adherence to standards and manufacturing efficiency gains.

# Company Values



- ▶ We are proud of who we are and what we do.
- ▶ We have respect for each other.
- ▶ We conduct our business in an ethical manner.
- ▶ We are open and honest in our communications.
- ▶ We are easy to do business with.
- ▶ We are customer focused.
- ▶ We are accountable for what we do.
- ▶ We have a can do mentality.
- ▶ We look to innovate at every opportunity.
- ▶ We are results driven.
- ▶ We are forward thinking in our approach to business.
- ▶ We will continuously improve what we do.
- ▶ We have some fun and enjoy what we do.
- ▶ We recognise and celebrate our successes.

# Reasons To Partner With CHH

- ▶ We are continually looking at ways to add value, solve problems and become a true extension of our customer's business.
- ▶ Our customers bring us tough problems which we transform into profitable solutions.
- ▶ We acknowledge that each customer's needs and wants are different, so we offer flexible solutions designed to fit specific requirements.
- ▶ Continuous improvement is a way of life.
- ▶ Our on time delivery and consistent high quality of product delivers the optimum Total Cost of Acquisition for our customers.





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