ENCONNEX

Born to Innovate

2022 Q2
Final Push Update

Global All-Hands
June 9, 2022

Agenda

- News - Robert
- Product Roadmaps - PMs
- Market Insights - Mike
- Innovation Challenge - Duke
- Operations - Thane
- Q&A

What's Happening at Enconnex?

News

New hires

Peter Thorburn - Operations - Reno

Zach Cheng - Engineering - Shanghai

Big Wins!

DC Blox: 86 DC cabinets
Novva : 100 more racks
Digital Edge: new, Edgerack
Ft Lupton: new, 4 racks, 8 PDUs
PhxNap: 21 more PDUs

Congratulations!

Carson Tao promoted to Mechanical Engineering Manager for the Shanghai team

Heads Up!

Juneteenth - USA - June 20

Independence Day - USA July 4

PM and Engineering

Power - Roadmap

AC6000 next generation (**UPDATE**)

- New battery selected for better safety factor and supply chain
- New controller design for much more features and space for future updates
- Expandable design for AC9000 and for longer run battery
- Estimated Availability - **Q4 2022**
- Outsourcing some portions of the design to speed up the development

TAA PDU (no change from May)

- 3 models sent to CSA for UL testing
- 10 models being developed to cover the wide range of North American circuits
- General availability Q3 2022

Custom UPDU (**UPDATE - CANCELLED**)

- For Ali in China - specification being reviewed by the customer
- 33xC19 and different pin configuration on the 7-pin universal connector
- Not expected for general release or use due to the customization

Real Device Testing - Roadmap

Fandoor for standard cabinets (no change from May)

- V5 to integrate the power cutoff switch into the door
- Estimated availability Q3 2022

DevShield 5G (Update)

- Available for sale now, launched

DevShield Mini (Update)

- Available for sale now, launched

DefenseShield Wall-Mount (Update)

- Available for sale now, launched

New Customized iPad Shelf (Update)

- Fits 32 iPad Pro, 2 Mac Minis and 2 USB hubs
- Integrated USB hub brackets
- Under Sample validation process

Connectivity - Roadmap

Copper and Fibers local sourcing

- In process of qualifying alternate local CM as well as other global regions

High Speed Fibers

- CS-LC (SM, Uniboot), CS-FC (SM, Duplex), and MTP16-LC (SM, 8x Duplex LC) to support 400G+ environment

Fiber Cassette Alternate Supplier Qualification

- Alternate vendor approved
  - Design slightly improved with prototype inputs from the customer
  - Improved tolerances also helped resolving a major customer deployment issue.

Transceivers Coding Capability in Reno

- Code validation capability now ready
- Working with Reno production team on code programming (small volume).

Metal - Roadmap

Standard Cabinet Enhancement (Updated, Design Stage)

- Unique Industrial design of the front door, 78% open hexagonal perforation for doors
- New Badge
- New Roof with New brush. Common Brush for roof, bottom, side panel, mounting rail.
- New Mounting rail with new Grommets, provision with cable finger, seal gasket.
- New front-to-rear cable trough.
- New lashing panels.

Containment (On hold)

- Swing door
- Automatic door with access system
- More Extrusion for containment frame and panel frame

EdgeRack - Roadmap

EdgeRack 5M (**UPDATE**)

- New replacement design for EdgeRack 5M with optimized design and better supply chain.
- Cooling unit is on production, qualified prototype will be ready on end of July.
- Cabinet 3D model is done, plan to place prototype order mid to late June.
- Estimated marketing launch Q3 2022.

EdgeRack 3P (NO UPDATE)

- New GUI updation completed while continue verifying.
- General availability Q4 2021.
- Update the user manual.

EdgeRack Industrial 7kW (**UPDATE**)

- New platform, 900mm x 45U Cabinet, 7kW self-contained Cooling, NEMA 12 / IP54.
- Started the whole unit test, performance test and verifying test will be done mid-June.
- Modifying 3D of Cabinet/Cooling unit June, plan to produce new prototype July.
- Documents delivered to Marketing team to prepare for product promotion.
- Estimated marketing promotion August and launch the product September.

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Born to Innovate

Product Management Market Insights

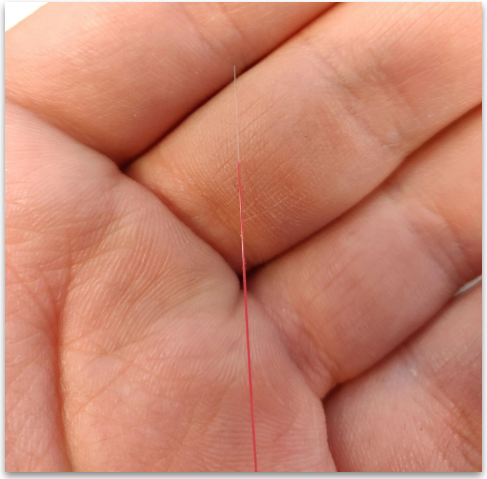
Understanding Fiber Basics

By Mike Chen
06.09.22

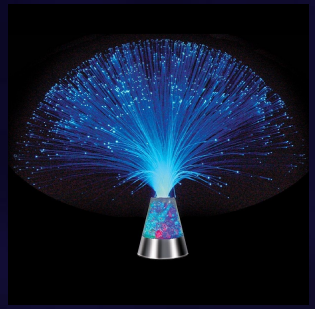
- What is Fiber Optics?
- Fiber Optics Uses
- Fiber Optics Signal Transmission
- Multimode vs. Single Mode Fibers
- Types of Optical Fibers, Colors
- Optical Fiber Connectors
- Optical Cable Performance Index
- Enconnex Offering

What is Fiber Optics?

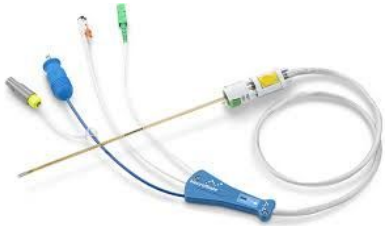
- Fiber optics is not really a new technology, it's fairly old.
  - Guiding of light by refraction, the principle that makes fiber optics possible was first demonstrated by Daniel Colladon and Jacques Babinet in Paris in the early 1840s.
- An Optical fiber is a flexible, transparent fiber made of high quality glass (silica) or plastic, slightly thicker than a human hair.
- It either functions as a waveguide or light pipe that transmits light between two ends of the fiber.



Fiber Optic Uses

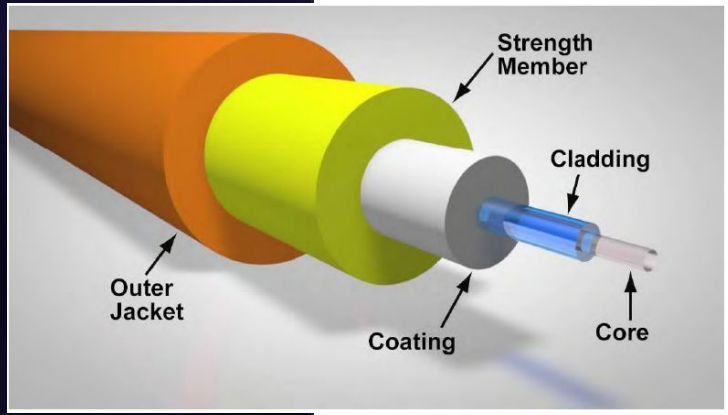


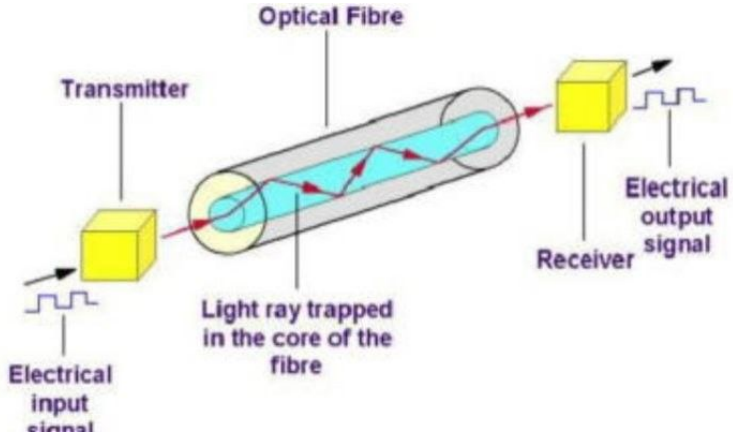
- Commonly used in communication, fiber optics sensors, illumination, and in the medical field.
- In communication, optical fibers allow data transmission over longer distances and at higher bandwidths (data rates) than other forms of communication.
    - Low data loss over long distance
    - Immune to electromagnetic interference



Fiber Optics Signal Transmission

- Electrical signals are converted into light/optical signals, propagated down the optical fiber cable, received and converted back into electrical signals at the other end.





Single Mode vs. Multimode Fibers

- Single mode fiber cable allows one type of light mode to be propagated at a time. While multimode means the fiber can propagate multiple modes.
- Single-mode fiber cable has a smaller core and cladding diameter of 9/125 micron. Higher transmission rates are achieved with single-mode systems, and signals travel successfully over longer distances, over 10KM.
- Multimode fiber optic cable has a larger core, typically 50 or 62.5 microns that enables multiple light modes to be propagated. Because of this, more data can pass through the multimode fiber core at a given time. The maximum transmission distance for multimode fiber cable is around 550 meters at the speed of 10Git/s. It can transmit farther at lower data rates, such as going about 2 kilometers at 100Mb/s.
- Light Source—Multimode devices usually use a LED or laser as a light source. While single mode devices use a laser, or laser diode, to produce light injected into the fiber.

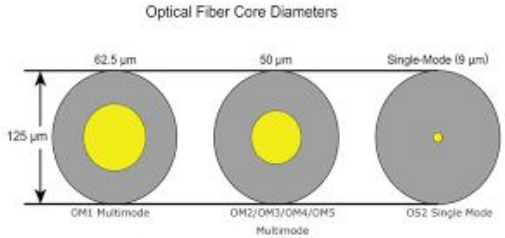
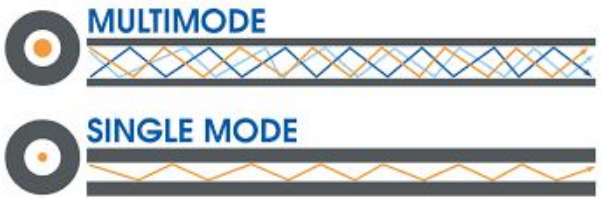


Figure 1: Optical Fiber Core Diameters



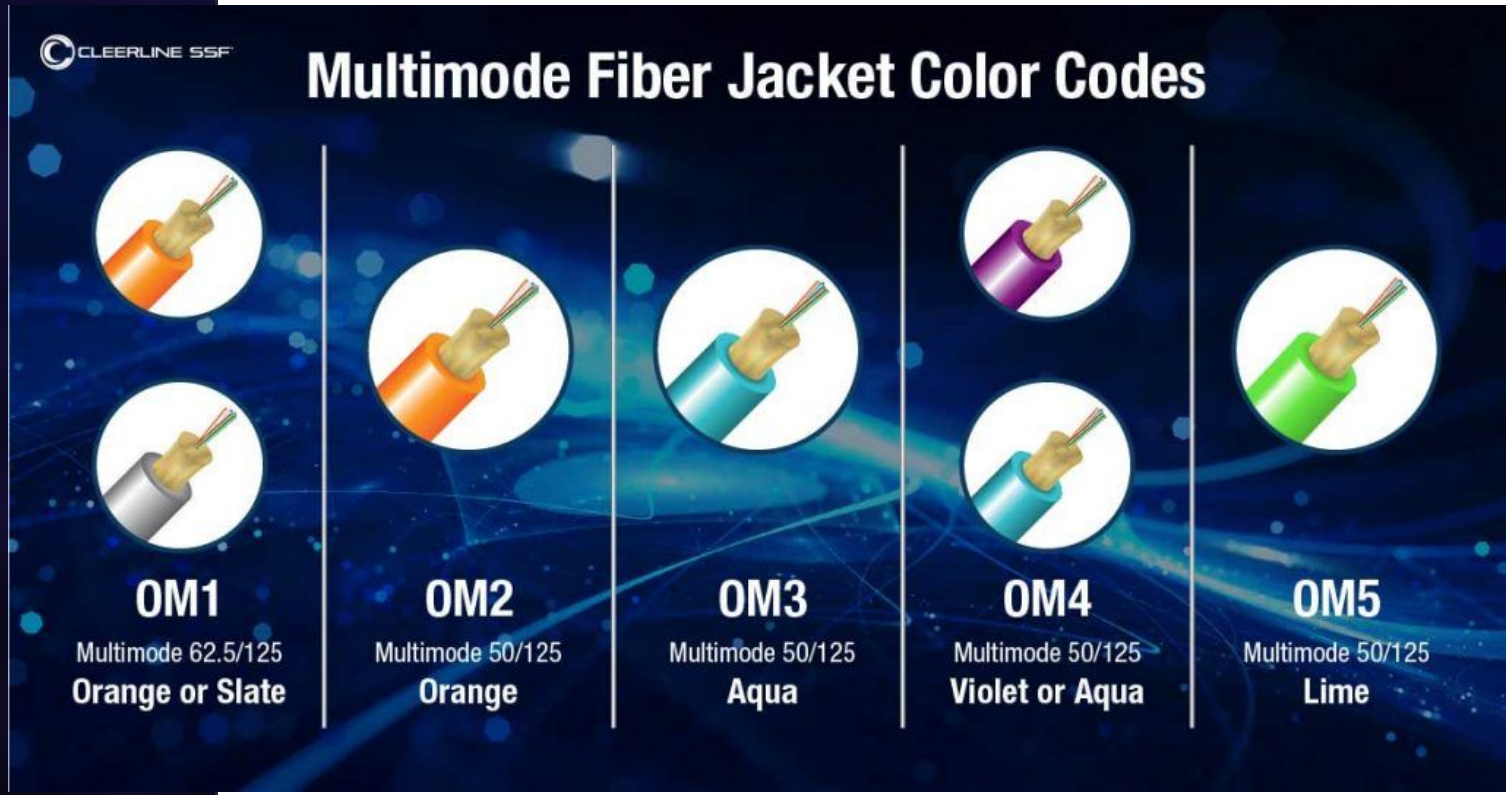
Types of Fibers

The prime distinction between multimode fibers rests on physical difference.

Accordingly, physical difference leads to different transmission data rate and distance.

Fiber Optic Cable Type		Fiber Cable Distance						
		Fast Ethernet 100BASE-FX	1Gb Ethernet 1000BASE-SX	1Gb Ethernet 1000BASE-LX	10Gb BASE SE-SR	25Gb BASE SR-S	40Gb BASE SR4	100Gb BASE SR10
Single Mode Fiber	OS2	200m	5,000m	5,000m	10km	/	/	/
Multimode Fiber	OM1	200m	275m	550m (mode conditioning patch cable required)	/	/	/	/
	OM2	200m	550m		/	/	/	/
	OM3	200m	550m		300m	70m	100m	100m
	OM4	200m	550m		400m	100m	150m	150m
	OM5	200m	550m		500m	100m	400m	400m

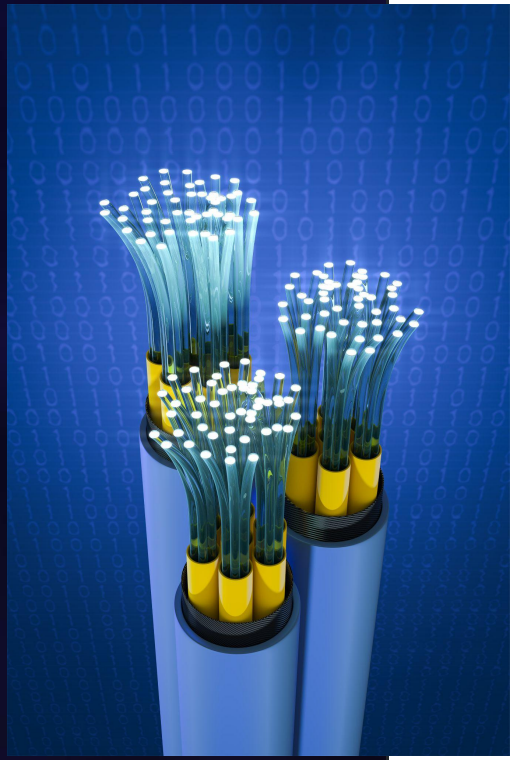
Multimode Fiber Standard Colors



Examples of Common Fiber Connectors

Common Fiber Connectors		
SC		DC, CATV, Telephony
LC		DC
FC		High vibration environment
ST		DC
MTP/MPO		DC, Multifiber termination

Fiber Cable Performance



- Fiber cable performance quality, or performance, is measured by Insertion Loss (**IL**) and Return Loss (**RL**):
    a. Insertion Loss (IL) – The loss of signal power resulting from inserting a device in an optical fiber. This can be referred to as attenuation and is usually expressed as a ratio, in dB, relative to the input power. Typical IL standard is < 0.3dB
    b. Return Loss (also called Back Reflection) – The reflection of signal power, usually resulting from inserting a device (such as a connector or other component) in an optical fiber path. Again, this is usually expressed as a ratio, in dB, relative to the input power. Typical RL standard is >= 30dB.

Enconnex Fiber Cable Offering

- OM3, OM4, OS2/SM Fibers (OFNR/OFNP)
- LC connectors with PEI housing, 0.5um concentricity ferrule
- MTP SM/MM Connectors by US Conec
- Unique Serialization - Date code/Lot code and operator traceability
- Superior rigid fixture polishing system (Domaille APM-HDC-5300) designed for complex multi-fiber applications
- 100% IL/RL Tested - JGR Insertion Loss Power Meter
- 100% 3D Tested - Sumix MAX Series Interferometer to ensure excellent geometry parameter
- 100% End-Face Tested - Sumix Manta +v2 uScope
- Operating Temperatures (-40℃ to + 75℃)
- Electrical performance guaranteed to meet or exceed
    - International : ISO 11801（2002, IEC 61156-5, TIA/EIA 568C
    - USA : ANSI/TIA-568-C.2 (Cat 5e , 6, 6A)
    - EURO : EN50173 : 2002
    - China : GB50311-2007

Our Customers

Innovation Challenge!

Design Requirements/Goals:

- Faster and more convenient to install than current method(s)
- Supports weight of cable bundles to reduce/prevent strain at connections
- Supports cable bundles from ~0.8” to 3.0” (20 mm to 75 mm) in diameter
- Quick attachment to sheet metal feature
- Removable from sheet metal for moves/adds/changes to cabling
- Low profile to minimize intrusion into cable management space
- Does not create pinch point on cable bundle
- Can replace Velcro or be used with/in combination
- Low-cost, < $0.25 - We will include approximately 10-20 pieces with every cabinet

Bonus/Nice to Have:

- If molded plastic - explore ways to incorporate Enconnex logo and/or color
- Swivels when installed in sheet metal to mitigate cable pinching/sharp bends
- Compatible with range of sheet metal thicknesses (1.2 mm to 2 mm)

Innovation Challenge!

The results are in! We had 16 ideas submitted by 12 participants.

Categories:

“Toast!” - for demonstrating a “Born to Innovate” spirit

“Out-of-the-Box” - for creative, out-of-the-box thinking

“Best Overall” - 1st, 2nd, 3rd

Mike Chen
Sam Ding
Daniel Downer
Fancy Fan
Ben Luke
Jason Nie
Carson Tao
Wayne Wang
Yifei Wang
Rianna Yang
Cici Yu
Amy Zhu

At Enconnex—We Are All Born to Innovate

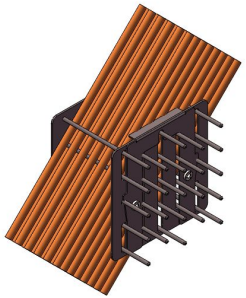
Toast! Winners

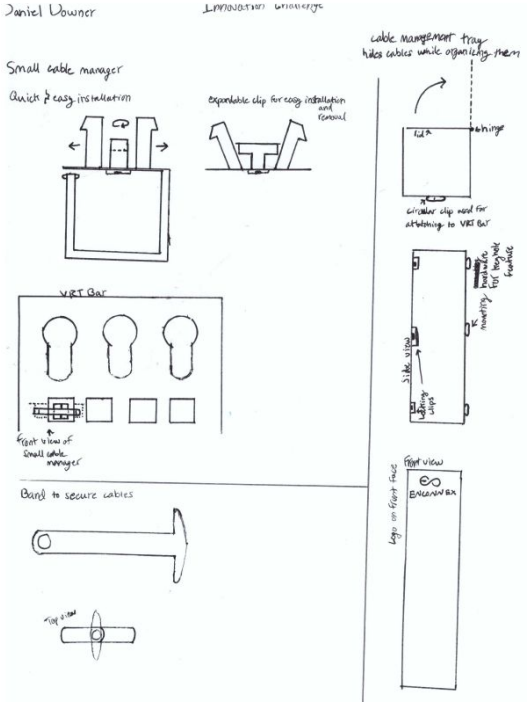
TOAST
YOU DESERVE A TOAST!

Mike Chen
Sam Ding
Jason Nie
Carson Tao
Rianna Yang
Cici Yu
Amy Zhu

$50 Gift Card

“Out-of-the-Box” Winners

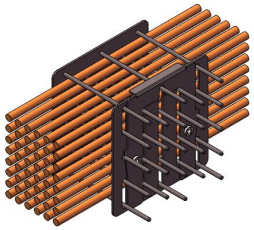




Daniel Downer

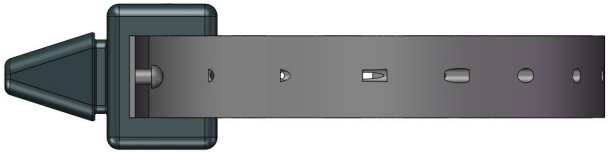
Yifei Wang

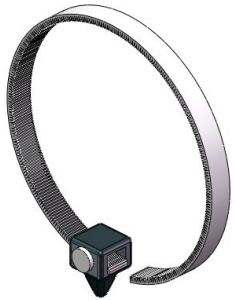
$75 Gift Card



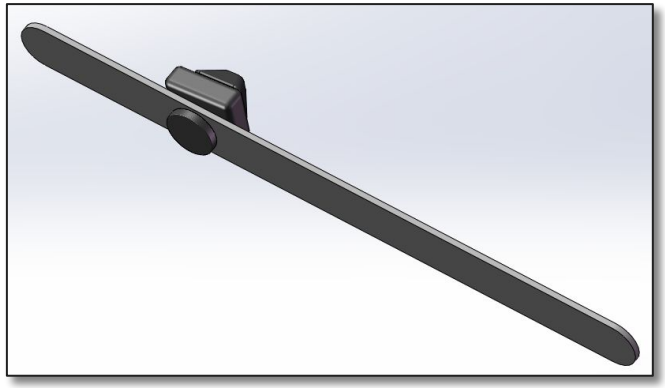
Best Overall - 3rd Place, Wayne Wang

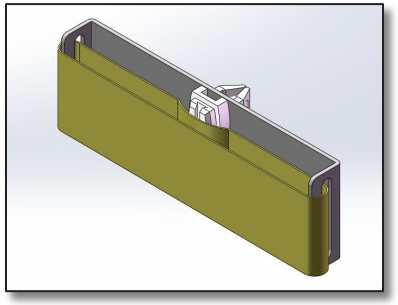
$100

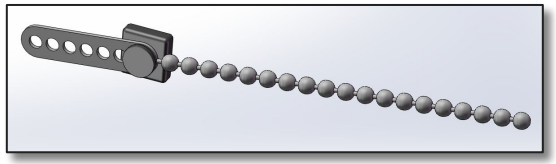


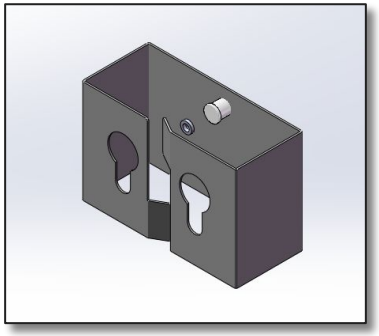


Best Overall - 2nd Place, Fancy Fan

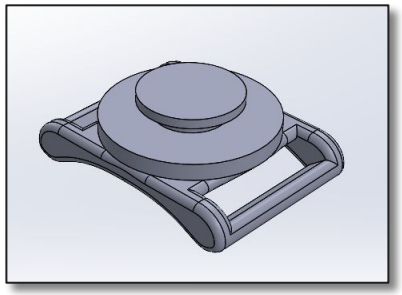


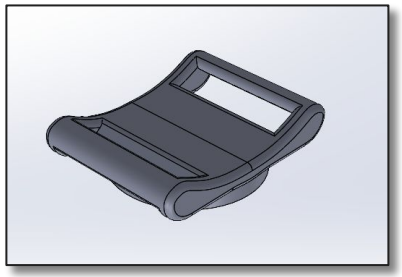


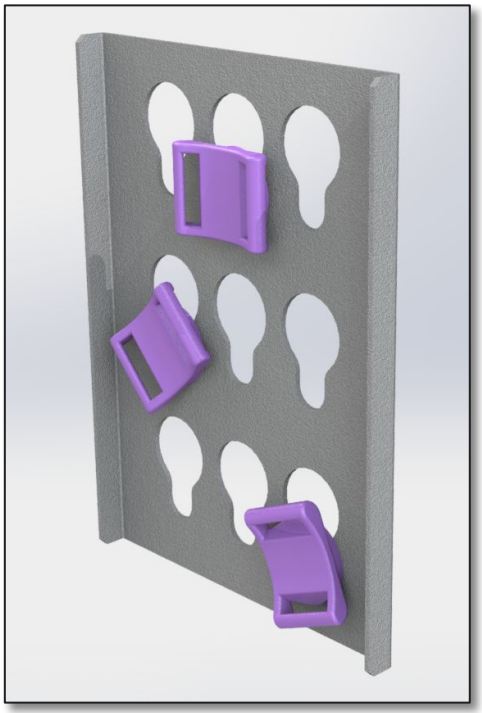




Best Overall - 1st Place, Ben Luke







Thank you and Congratulations!

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Cici Yu
Amy Zhu

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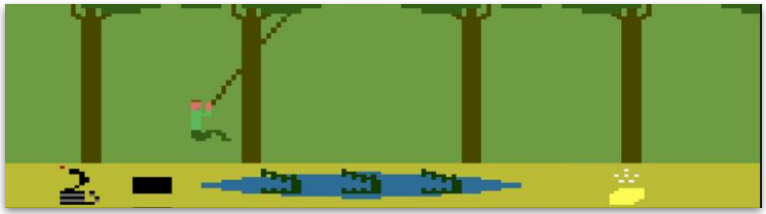
Operations
Sales Ops, Manufacturing, Logistics

Sales Ops Q2 Performance Data

- 3 weeks left in the qtr!!!
- Current bookings: $2.5M
- Current Invoiced: $1.8M (Q1: $2.6M)
- Projected forecast: $3.8M (Q1: $3.8M)
- Total orders booked: 162 (Q1: 141)
- Total quotes sent: 239 (Q1: 202)
- Total invoices sent: 191 (Q1: 157)
- Deal sizes are increasing in volume and value

Q2 SAW PLENTY OF CHALLENGES



- Supply chain issues have not slowed
- Resurgence of COVID in Asia
- Factories and ports closed
- Very long production lead times and delivery times

Looking Forward To Q3+

- Strengthen funnel and expand partners as necessary
- Clear our large $2.8M backlog (Booked, not shipped / invoiced)
- Continue strong communication and planning
- Work with Sales to predict critical inventory needs
- Work to close some very large ops in Q3 and Q4
- Work with PM and Marketing to prepare business for new Cabinet and AC6000 designs
- Evaluate staffing requirements for next 6 months (Google, PDUs, AC6000 etc.)

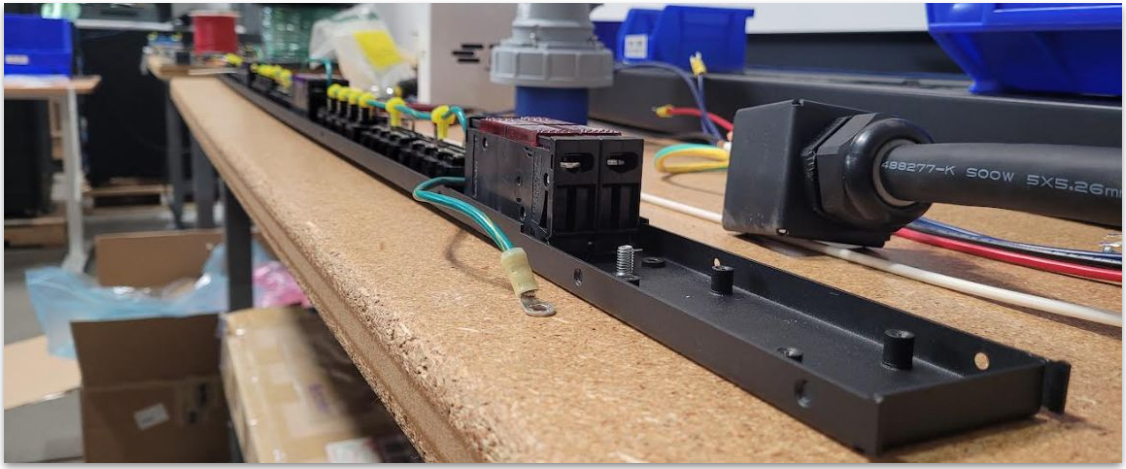
MANUFACTURING UPDATES

- **Google AV Project**
  - Phase II complete - Exceptional work team!
  - Consignment of material from Rahi is still underway
  - Lectern upgrade TT2 to TT3 is in process ~ 15 weeks left
  - AV Rack build to start in next few weeks
  - Gearing up for Phase 3

- **AC6000 Production**
  - Goal was to build remaining units by EOQ1
  - Other priorities took place
  - Final units are being produced to close out Phase 1 line
  - New promotion gained some traction
  - Team is starting to prep for Version 2

MANUFACTURING UPDATES

- **Basic PDU Line**
  - Waiting on final certification approval
  - Team prepping production line area for first runs (20-30 units)
  - Goal to be up and running by mid Q3 with targets set on higher production numbers



LOGISTICS UPDATES

So far:

- Manufacturing Orders: 110
- Work Orders: 114
- 3 new Operations Associates hired:
  - Leanna Lichtenberg
  - Eileen Varela
  - Peter Thorburn
- Reniel Vivo promoted to Operations Specialist!

Looking Ahead:

- Continue scrapping efforts to clear space
- Redesign areas to be more space efficient
- Working with management team to plan for growth over next 6 months

Q2 Enconnex Evangelist Award Winners

$100

Thank you for promoting Enconnex every day!

Nes Rodrigues

Katie Krause

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Q & A

Thank You

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