



2022 Q4 Looking Forward

Global All-Hands
October 13, 2022

Agenda



- News - Robert
- Product Roadmaps - PMs
- Market Insights - Mike
- Sales - Jerod
- Marketing - Julie

What's Happening at Enconnex?

News



New hires

-Reno Ops-
Danny McCormick
Edgar Hernandez
Josiah Schotborgh
Christopher Harper

Big Wins!

Jerod will share

Attention!

Make sure to get your holiday
PTO planned.

Heads Up!

Reno Diwali-Ween
October 28th



Core Values

A Toast to You!



Big Picture Thinker

Carson - A top performer leading the engineering team in China driving innovation every day in products like the upcoming EdgeRacks.

Individual Accountability

Deanna and Renny - Jumping in to do anything and everything possible to bring continual improvement and customer satisfaction to bear.

Team Mentality

Komal and Cody S - Ensuring that transition of personnel resources had no effect on the Google A/V project.

Work/Life Balance

Jerod and Dave B - Sales is a tough job with endless hours supporting customers. It takes great balance to keep life going well.

PM and Engineering

Real Device Testing - Roadmap

Fandoor for standard cabinets (no update)

- V5 to integrate the power cutoff switch into the door
- Collecting design feedbacks from the customer

Customized iPad Shelf (no update)

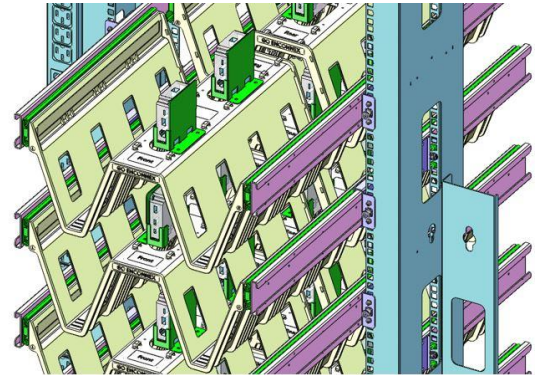
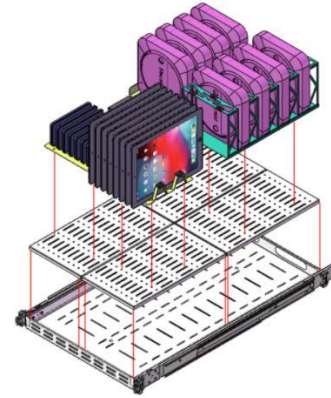
- Fits 32 iPad Pro, 2 Mac Minis and 2 USB hubs
- Collecting customer feedbacks

Device holders for flat sliding shelf (update)

- 8 different type of device holders that can securely place testing devices in any combination at any place in the shelf
- Moved from design verification to sample validation process
- Estimated availability Q4 2022

Customized Plastic laptop testing shelf (new)

- Plastic as non-conductive material will not block signal as sheet metal material dose, make sure signal reach to the laptop at very bottom level
- Under design verification process



Connectivity - Roadmap

Connectivity Inventory Purchase

- New inventory order on hold until November
- Team to plan for expediting connectivity shipments in Q4 '22 and Q1 '23.

Qualifying Local CM

- Reviewed samples and improvements in discussion
- Preparing ECX samples for CM matching

Metal - Roadmap

Infinirack (Generally Available in March)

- Internal load test passed in Sep.
 - Static 4000lbs, rolling 3000lbs
- Prototype Evaluation
- Design Finalize in next month
- Prepare the UL test
- Item Master and PN matix update



EdgeRack - Roadmap

EdgeRack 5M (UPDATE)

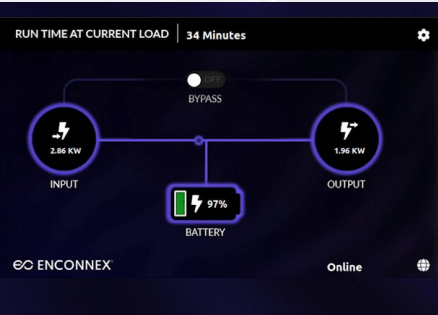
- Self-contained cooling unit, 5kW, variable capacity, 31U usable IT space.
- **Easy installation**, with rollers, bottom rack-mounted .
- Built-in water processing device, environmental control inside cabinet.
- Scalability application.
- Cabinet design modification (600mm & 800mm), Compliance test, estimated launch Q1 2023.

EdgeRack Industrial 8M (UPDATE)

- 900mm x 1300mm x 2100mm , NEMA 12 / IP54.
- Self-contained cooling unit, 8kW, variable capacity, 42U usable IT space.
- Built-in water processing device, environmental control inside cabinet, **easy installation and maintenance.**
- Scalability application.
- Compliance test passed, estimated launch Nov 2022.



Power - Roadmap



AC6000 next generation (no 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 - Q2 2023
- Outsourcing some portions of the design to speed up the development

TAA PDU (UPDATE)

- All models sent to CSA for UL testing
- General availability Q4 2022



Optical Transceivers Basics

All-Hands
October 13, 2022

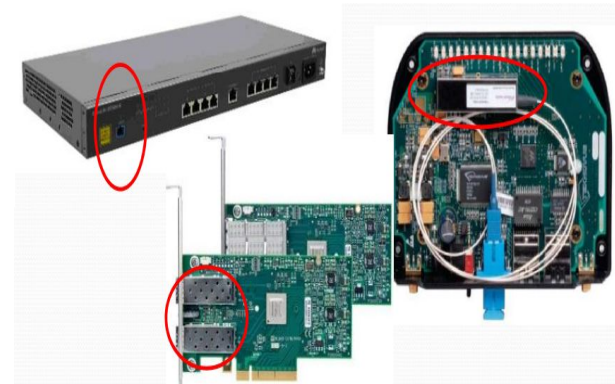
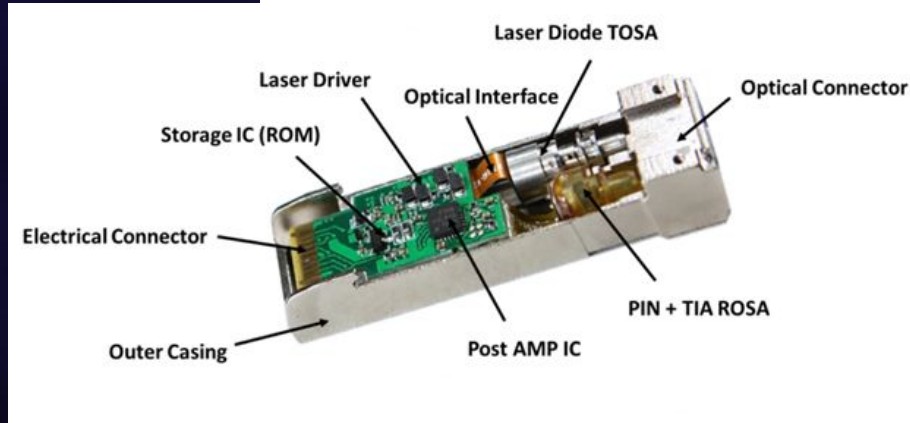
Agenda



- What is an Optical Transceiver?
- TOSA and ROSA
- History of Transceivers
- Transceiver Development Considerations
- Transceiver and the OSI Model
- Types of Transceivers
- Application scenarios of Transceivers
- Key Manufacturers and Standards
- Key Parameter of Transceivers
- Transceiver Test Equipment

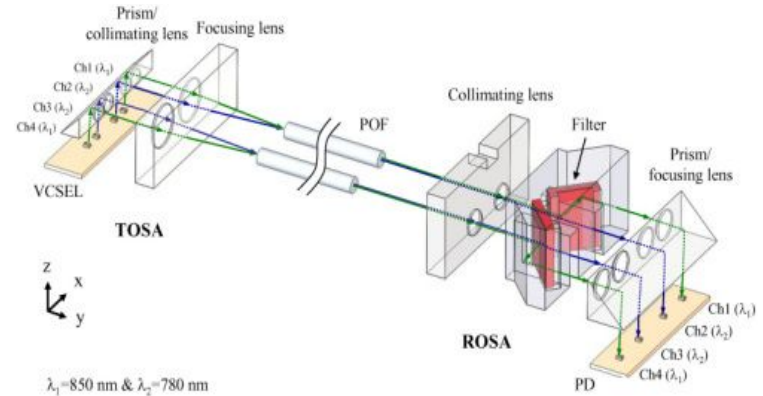
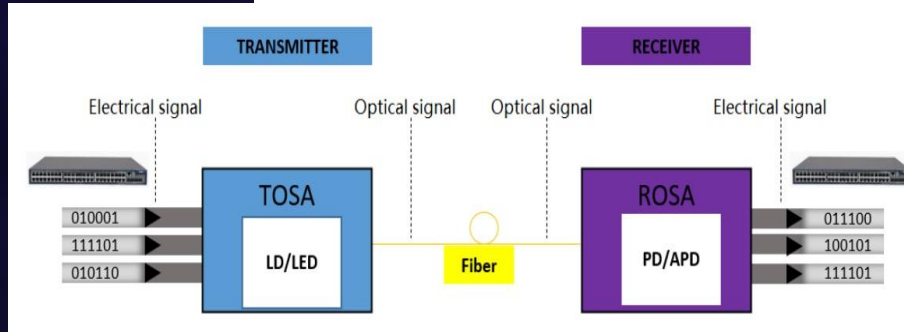
What is an optical transceiver?

An Optical Transceiver is an optical device that can both transmit and receive electrical and optical signals in a network environment.



What is an optical transceiver?

Electrical signal is converted to Optical, and vice versa, by means of TOSA and ROSA sub-assemblies in a transceiver.



TOSA and ROSA

OSA (Optical Sub-Assembly) components are the most critical components in a transceiver. (Other key components are PCBA, Optical connectors and outer metal case).

TOSA (Transmitter Optical Sub-Assembly) is composed of three parts: drive circuit, control circuit (such as APC, ATC) and light source, and has functions such as emission prohibition and output monitoring. Three types of Lasers used today:

- VCSEL: Vertical Cavity Surface Emitting Laser):850nm, Short Reach
- FP: Fabry-Perot Laser:1310nm, Intermediate Reach
- DFB: Distributed Feedback) Laser:1310nm and 1550nm, Long Reach

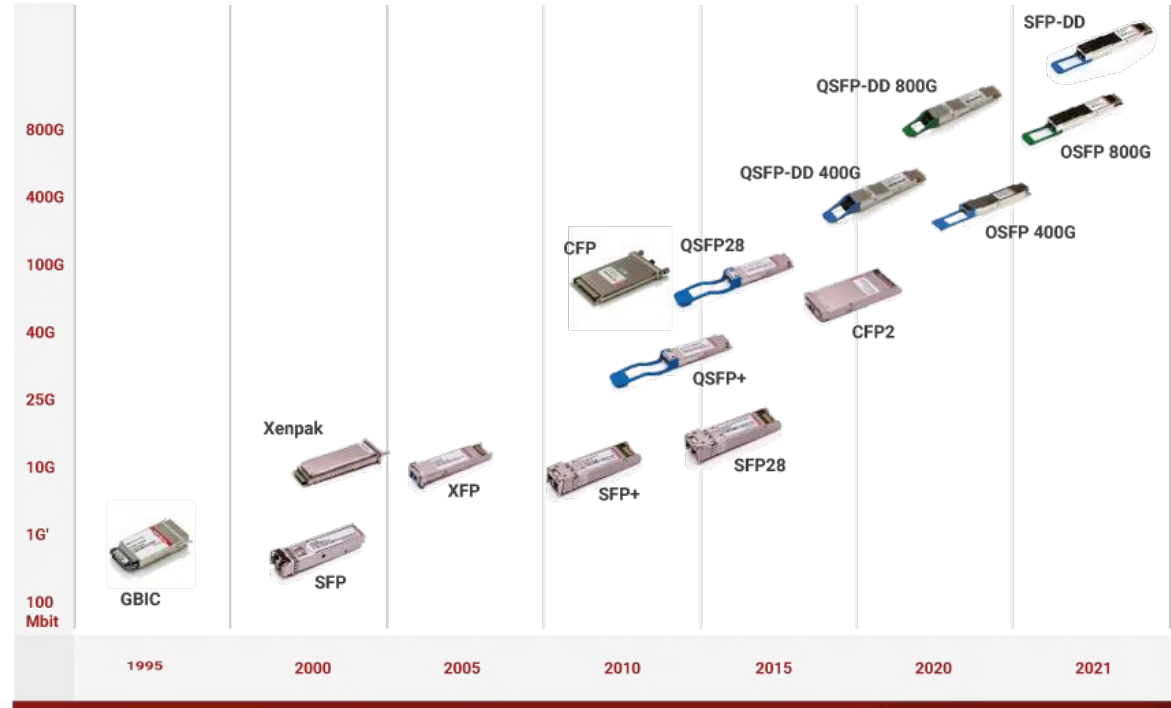
ROSA (Receiver Optical Sub-Assembly) is mainly composed of PIN-TIA preamplifier and main amplifier circuit, and has the function of no light alarm (LOS). Two common types of receiving LEDs used:

- PIN-TIA
- APD

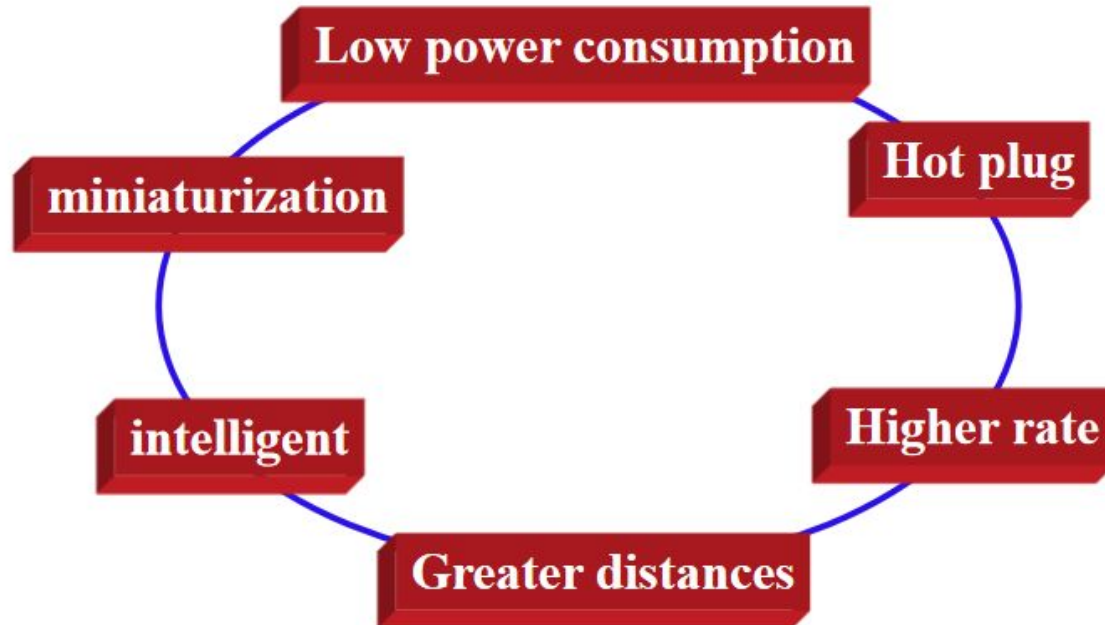
History of Transceivers

The original model of the optical module was a 1x9pin module with a maximum rate of 155Mbps, invented in the 90s.

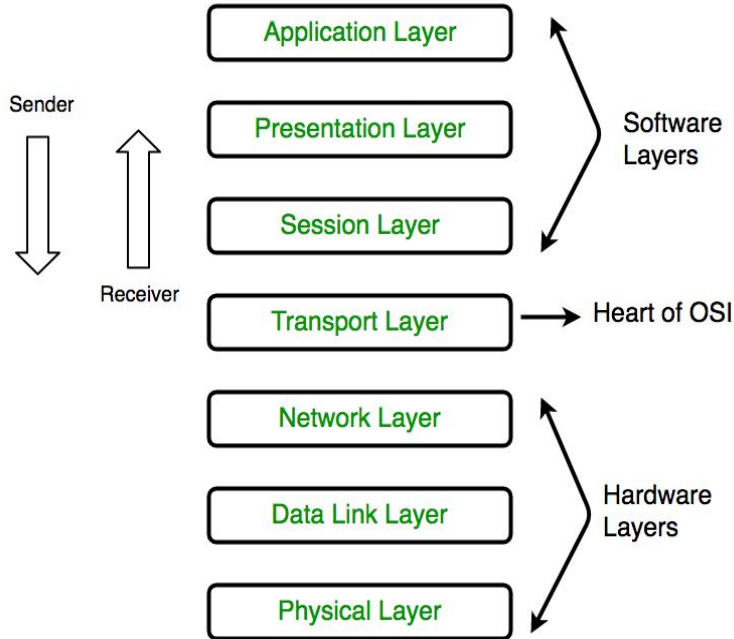
GBIC was created to meet the higher demand for transmission speed in modern data centers.



Transceivers Development Considerations



Transceiver and the Open System Interconnection (OSI) Model



- Human Computer interaction layer, where applications can access the network service
- Ensures that data is in a usable format and is where data encryption occurs
- Maintains connections and is responsible for controlling ports and sessions
- Transmits data using transmission protocols including TCP and UDP
- Decides which physical path the data will take
- Defines the format of data on the network
- Transmits raw bit stream over the physical medium

Types of Transceivers

Transceivers can be defined...

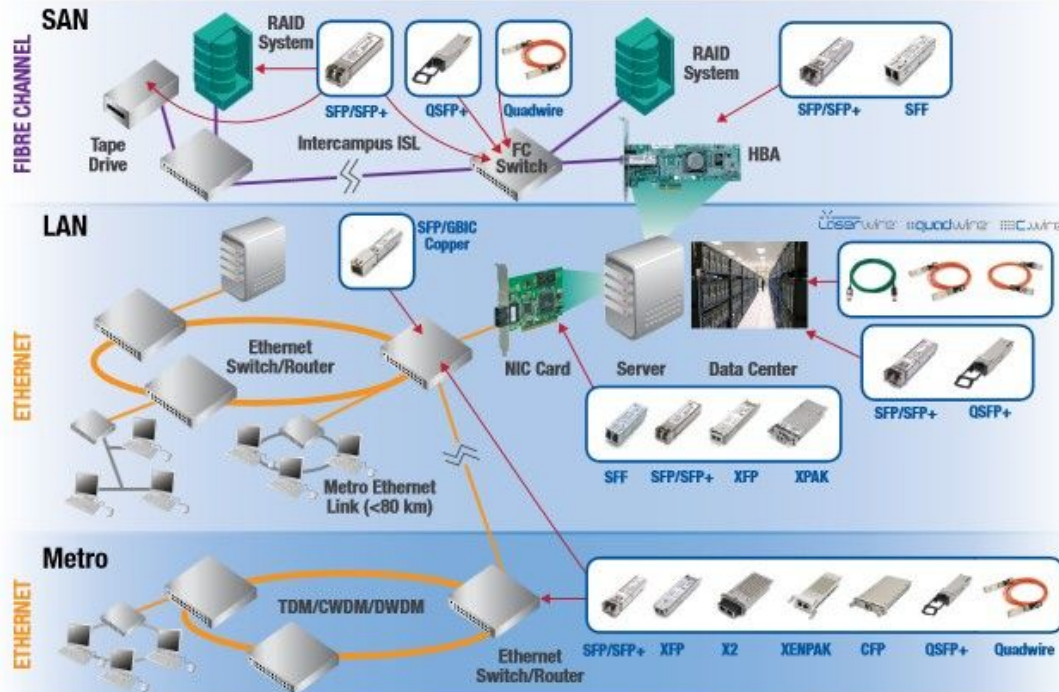
- By Packaging: SFF, GBIC, SFP, SFP+, XFP, QSFP, QSFP-DD
- By Speed : 100M, 622M, 1G, 10G, 25G, 40G, 100G, 400G。
- By Connector : SC, FC, ST, LC
- By Function: TX transceiver, RX transceiver, Bidi Transceiver
- By Transmission Medium: Single-mode transceiver, Multimode transceiver

Two basic packaging form factors of transceivers:

- SFP (Small Form Factor Pluggable, also named mini-GBIC). The advantage of SFP is hot-pluggable, small size, and metal casing.
- QSFP, or quad small form-factor pluggable, is another type of compact, hot-swappable transceiver. It supports Ethernet, Fibre Channel, InfiniBand, and SONET/SDH standards with different data rate options.

Application Scenarios of Transceivers

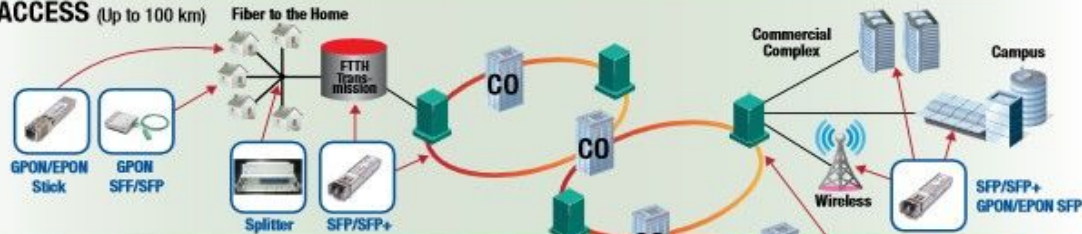
DATACOM NETWORK EXAMPLE



Application Scenarios of Transceivers

TELECOM NETWORK EXAMPLE

ACCESS (Up to 100 km)



METRO-REGIONAL (100-800 km)

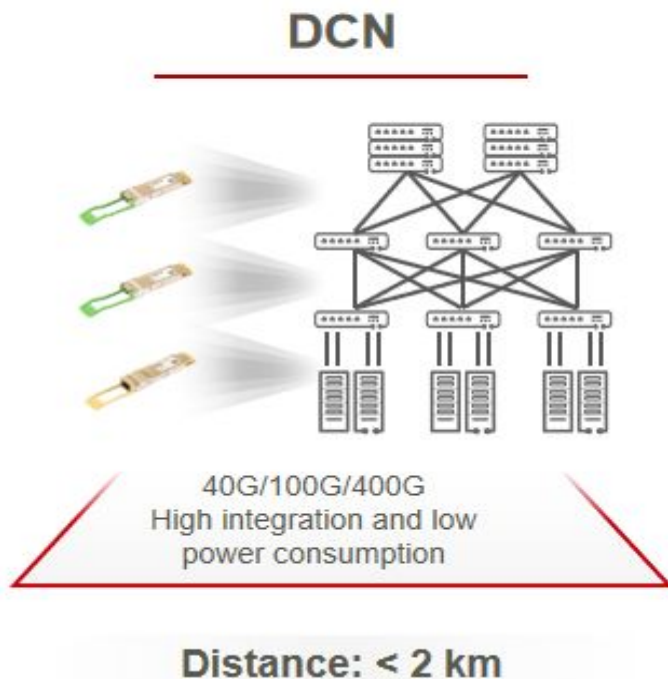


LONG-HAUL (800-2000 km)



High-Speed Data Center Transceivers

100G/200G/400G



| | Product | Form Factor |
|-------|---------|-------------|
| 40G | LR4 | QSFP+ |
| | ILR4 | QSFP+ |
| 100GE | SR4 | QSFP28 |
| | CWDM4 | QSFP28 |
| | DR1 | QSFP28 |
| | FR1 | QSFP28 |
| 400G | DR4 | QSFP-DD* |
| | FR4 | QSFP-DD* |

Key Manufacturers and Standards

Key Players:

- USA: Finisar, Cisco, Juniper
- Japan: Opnext, Sumitomo, Fujitsu
- China: Huawei, Innolight, Accelink

Standards:

- MSA: SFF MSA, SFP MSA, SFF 8427 (Digital Diagnostic), SFF 8431 (SFP+), XFP
- Ethernet Protocols: IEEE 802.3-2002 (Genera), IEEE 802.3ah (EPON), IEEE 802.3ab (10/100/1000Base-T), IEEE 802.3ae (10G), IEEE 802.3av (10G EPON)

Key Parameters of Transceivers

- Average output optical power (P_{out}/dBm)
- Eye diagram and extinction ratio (Ext/dB)
- Spectrum and center wavelength nm, spectrum width nm, side mode suppression ratio dB
- Turn off the TX-dysfunction Parameters to be tested for the optoelectronic module
- Receive Sensitivity (SEN/dBm)
- Saturation Optical Power (PS/dBm)
- Alarm/de-alarm (H-L, L-H/ dBm)
- Alarm Hysteresis (dB)
- Operating current (I_{cc}/mA)

Key Parameters of Transceivers

Transmitter transceivers:

Spectrum:

central wavelength

spectrum width

frequency chirp

SMSR

Optical Eye Diagram:

rise/fall time

extinction ratio

crossing point

SNR

jitter

Optical:

power of mean

optical isolation

Other:

EMI/EMC

Key Parameters of Transceivers

Receiver transceivers:

Spectrum:

respond wavelength

Optical:

sensitivity

saturation

optical reflectivity

Electronic:

LOS detection

jitter tolerance

jitter transport

jitter generation

EMI/EMC

Transceiver Production Test Equipment

- Bit Error Analyzer
- Oscilloscope
- Optical power meter
- Adjustable light attenuator_x0002_
- Spectrum analyzer_x0002_
- Multi-wavelength meter
- Power_x0002_8, test board

Thank You



Sales

*“Embrace the messy to get to the great” - Jesse Cole,
Savannah Bananas*

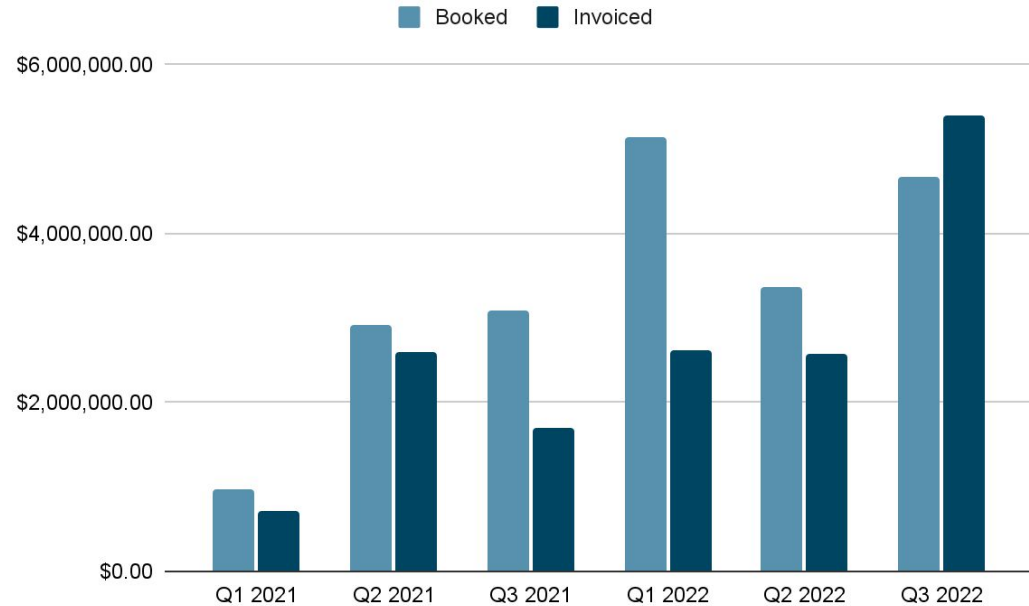




Q3 2022 Results and more....

Quick Sales Figures Breakdown:

- Bookings increased 50% YoY from Q3 2021 to Q4 2022
- Revenue increased 216% YoY from Q3 2021 to Q4 2022
- Bookings increased 39% QoQ and Revenue increased 109% QoQ
- \$2.3M backlog going into Q4!
- Current Q4 Projections:
 - Most Likely: \$2.7mm
 - Upside: \$5mm
 - Revenue: \$3.5mm
-



Key Q3 Wins



- Peraton/Kambria - DefenseShield
- Trip Wireless **New Client** - Cabling
- Durkin & Associates **New Client** - Cabling
- ZeroBounce **New Client** - EdgeRack 3P
- PheonixNAP - Cabinets and Power
- NASA - Custom Enclosures
- DataSpan / US Cellular **New Client** - Cabinets
- USNet **New Client** Containment
- Align / Rackspace - Cabinets and Power

Marketing



Marketing

Q4 will be “Infinitely” exciting!



Enconnex Evangelist Award Winners

\$100

Thank you for promoting Enconnex every day!

Komal Parab, Duane Coder



DevShield Wins!



Company: Enconnex

Product/Project/Application: DevShield RF Shielded Enclosure

Award Level: Silver Honoree

Category: Test Equipment



Marketing 2022 Objectives



- Build our brand.
- Get found online.
- Drive leads. Help drive sales.
- Improve our thought leadership positioning.
- Launch new products.
- Go all in on Partners.
- Improve our tools and drive automation.

We Promoted In Stock Products

ENCONNEX

The easy solution to reducing energy and improving visibility.

- > **White cabinets.**
In stock and available now.



ENCONNEX

ECX CABINETS
**Deployed in Data Centers
Across the Globe for a Reason**

- > Designed by data center experts for data center experts.



Server cabinet supply chain woes?

A complete line of the data center server racks and cabinets you want, **in stock now.**



ENCONNEX

Power cord procurement problems?

We carry power cords for data centers, IT infrastructure, and network gear: C13-C20.
In stock now.

ENCONNEX
Built to endure.



ENCONNEX

Brighten up your data center and lower the temperature.

- > **White server cabinets.**
In stock.



ENCONNEX

Oodles of networking noodles.

(Meaning we have lots of network cabling inventory!)



ENCONNEX

ECX CABINETS

**Tested and Approved by the
World's Top Companies**

- > Anything but standard. Exceptional quality. Solid steel construction. Built to your specs.



Ad · www.enconnex.com ▾ 833 825 5329

Server Racks for Sale | In Stock & Ready To Ship

Why Enconnex server racks & cabinets? Superior quality, performance, price & in stock now. Not sure what you need? Leverage our team's expertise. We'll get you what you need. **Black & White In Stock Ships Fully Assembled. Engineered to Order. All Common Sizes in Stock.**

Weekly Endless Innovation Initiative

EFFICIENT, ENDLESS FACTORY COMMUNICATION

THE CHALLENGE

Limit reliance on direct communication for urgent orders to ensure maximum efficiency.

THE OLD WAY

Work orders typically require direct communication for cross-departmental handoffs opening the door for inefficiency if there's a delay in response.

THE ENCONNEX WAY

High-priority items moving through our system trigger mobile app alerts allowing all responsible parties to keep track of when their input will be needed and where.



ENDLESS
INNOVATION
by ENCONNEX

CROSS-DEPARTMENTAL COMMITMENT TO INNOVATION

THE CHALLENGE

Streamline communications between quality assurance and other teams to maximize customer satisfaction.

THE OLD WAY

Different tools for different departments with suboptimal cohesion between them. (Ex. ERP, CRM, PLM, etc.)

THE ENCONNEX WAY

Customized quality modules in a unified ERP/CRM/PLM system to tie IQC directly to supplier management, customer feedback directly to sales/operations, and corrective/preventative actions to design control/supply chain.



ENDLESS
INNOVATION
by ENCONNEX

AWARD-WINNING DEVSHIELD REAL DEVICE TESTING ENCLOSURE

THE NEWS

Enconnex wins Cabling & Installation Maintenance Silver Innovators Award for the DevShield RF Shielded Enclosure in the Test Equipment category.

THE INNOVATION

DevShield is a unique RF shielded data center cabinet designed for real device testing (IoT devices, apps, software, etc.) at a massive scale.

THE AWARD

Recognizes the most innovative cabling and communications technology products and systems within the structured cabling industry.



ENDLESS
INNOVATION
by ENCONNEX

BORN TO INNOVATE

The evolution of data center and IT infrastructure technology often outpaces manufacturer offerings. At Enconnex, we don't believe it should.

THE OTHER GUYS

Following the status quo. Only offering new products and technologies when consumer demand dictates.

THE ENCONNEX WAY

Challenging the status quo. Anticipating consumer demand and providing forward-thinking solutions for an ever-growing industry.



ENDLESS
INNOVATION
by ENCONNEX

COMPACT AND CLIMATE-CONTROLLED NON-TRADITIONAL DEVICE SHELF

THE CHALLENGE

Providing consistent airflow for non-traditional devices in standard IT cabinets.

THE OLD WAY

Stacking non-traditional devices on standard rack shelves and hoping nothing goes wrong.

THE ENCONNEX WAY

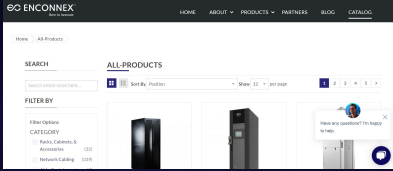
Compact (1U) shelves built to securely hold up to 4 non-traditional devices designed with efficient, directed airflow.



ENDLESS
INNOVATION
by ENCONNEX

We got dirty. Really dirty.

Develop new catalog site: Now that's a dirty job.



We need a better customer experience.

We need Google to like us a lot. HUGE SEO opportunity here.

We need great site search functionality.

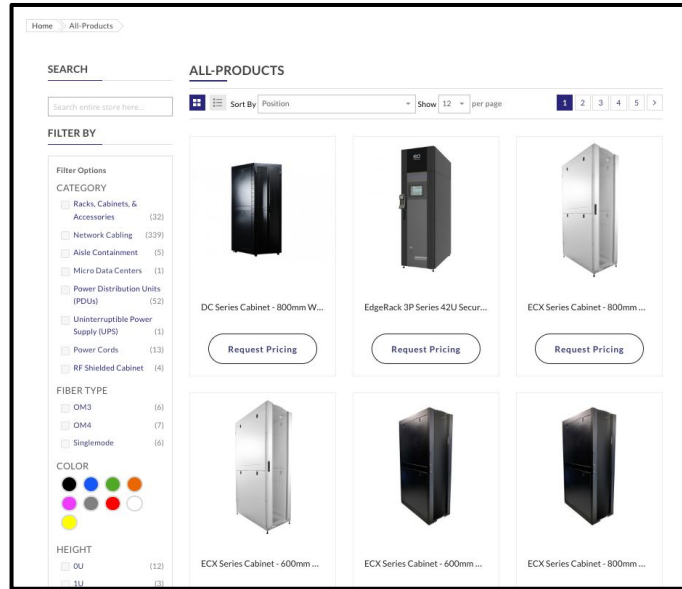


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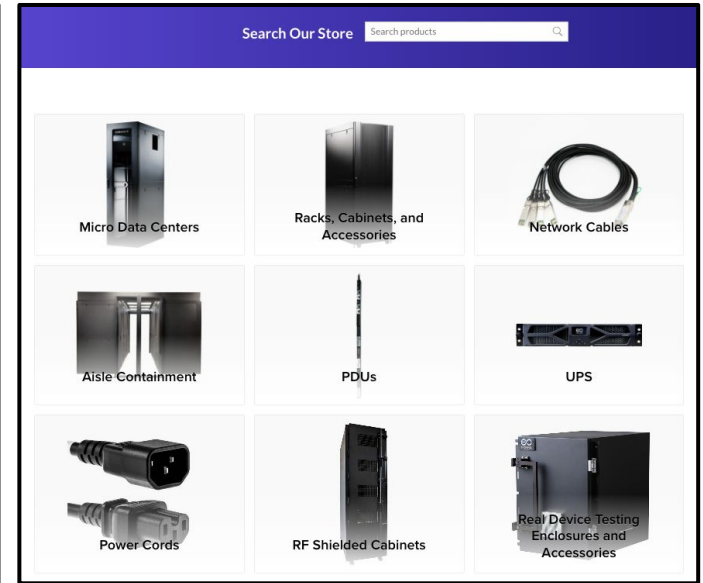
Catalog Revamp: Home Page

Visitors are presented with a cleaner, simpler, and more organized home page.

Old Home Page:



New Home Page:



Catalog Revamp: Product Pages

We're using the product pages to get the conversation started and entice visitors to request a quote.

Old Product Page:

Home > 400-415 VAC, IEC60309 532P6 (IP44), Input Metered PDU

400-415 VAC, IEC60309 532P6 (IP44), Input Metered PDU

SKU: ECK-MV1730121-T

The ECK-MV1730121-T Input metered PDU distributes power to devices in the rack and offers real-time phase and circuit breaker monitoring and network monitoring of power loads for overload avoidance, capacity & load balancing, and energy use optimization. A hot-swappable network management controller allows for future upgrades and enhanced MTTR. The controller can also manage up to eight environmental sensors, or two security access handles which are managed through the PDU. The ECK-MV1730121-T can be managed by webUI, telnet or SSH, SNMP, or RESTful API.

[Request Pricing](#)

| PHYSICAL | Dimensions (WxDxH) | 68.9" x 2.17" x 2.59" (1750 x 55 x 63 mm) |
|----------------------|--------------------------|--|
| COMPONENTS | Orientation | Vertical |
| | Depth at Circuit Breaker | 2.95" (75mm) |
| CONFORMANCE | Power Cord Length | 30" (3m) |
| | Input Current | 30A (24A derated, 3 phase) |
| SUPPORTING DOCUMENTS | Input Phase | 3PH |
| | Input Power | 17.3 kVA (NAM) / 22.3 kVA (EMEA) |
| | Overload Protection | 60/20A, 1 yellow, 10A/6C, hi-mag circuit breakers |
| | Outlet Configuration | Total: (2)C13, (2)C19, Per Breaker: (1)C13, (1)C19 |

SEARCH

Search within store here.

- GLOBAL SERVICES
Worldwide Support
- CUSTOMER SUPPORT
24hr Live Chat
- END-TO-END SOLUTION
All your data center needs
- SCALABLE
No matter how fast you grow

New Product Page:

Inlet-Metered PDU (OU) - IEC

Store / PDUs / Metered PDUs

SKU: ECK-MV

Your one-stop shop for data center and IT infrastructure products. Bundle solutions to save.

Input Plug Type, Outlet Count, and Region

✓ Please choose

- 60309 316P6 (IP44) - C13 (20), C19 (4) - EMEA
- 60309 332P6 (IP44) - C13 (24), C19 (4) - EMEA
- 60309 332P6 (IP44) - C13 (36), C19 (6) - EMEA
- 60309 316P6 (IP44) - C13 (36), C19 (6) - EMEA
- 60309 532P6 (IP44) - C13 (24), C19 (12) - EMEA
- 60309 532P6 (IP44) - C13 (30), C19 (12) - NAM and EMEA
- 60320 C20 - C13 (24), C19 (4) - NAM and EMEA
- 60309 460P9 (IP44) - C13 (24), C19 (12) - NAM

Product Details

Specifications and Compliance: See "Documents" tab

| Description | Documents |
|---|-----------|
| The Encornex line of Inlet Metered PDUs distribute power to devices in the rack and offers real-time phase, circuit breakers and inlet level metering and network monitoring of power loads for overload avoidance, capacity & load balancing, and energy use optimization. A hot-swappable network management controller allows for future upgrades and enhanced MTTR. Units & options | |

Improvements:

- Directing visitors to datasheets for physical and compliance information to eliminate risk of inconsistency.
- All configurations shown as drop downs instead of individual pages.
 - Went from 500+ product pages to about 120. Much more manageable.
- Last must-have is "Request Pricing" button. Working through dev. challenges.



Catalog Revamp: Search

Search functionality has been an issue with the current catalog site.

Hard to get clean results.

Search = "ECX"

SEARCH ALL-PRODU

ecx

Suggested

- ECX (600)
- ECX-61024-C0 (553)
- ECX-1UPL-5 (2)

Products See All 427

- DevShield RF Shielded Cabinet
SKU: ECX-RFC-61342-1
- DevShield Mini Enclosure
SKU: ECX-RFC-484129
- DefenseShield™ Wall Mount Enclosure
SKU: ECX-RFC-16307U-WM
- Vertical Cable Manager - 52U
SKU: ECX-CBLMGR-VRT52U
- Vertical Cable Manager - 48U
SKU: ECX-CBLMGR-VRT48U

Search = "ECX-MV"

SEARCH ALL-PRODU

ecx-mv

Suggested

- ECX-MV (10)
- ECX-MV1730060-G (539)
- ECX-MV1736060-G (553)

Products See All 427

- DevShield RF Shielded Cabinet
SKU: ECX-RFC-61342-1
- DevShield Mini Enclosure
SKU: ECX-RFC-484129
- DefenseShield™ Wall Mount Enclosure
SKU: ECX-RFC-16307U-WM
- Vertical Cable Manager - 52U
SKU: ECX-CBLMGR-VRT52U
- Vertical Cable Manager - 48U
SKU: ECX-CBLMGR-VRT48U

Catalog Revamp: New Search


Search functionality is now much improved.

We can even train it as we get data from real visitors. Common typos, synonyms, etc.

Search = "ECX"

Search Our Store


PRODUCTS



ECX (Standard) Cabinet
Racks, Cabinets, and Accessories / Racks and Cabinets

The Enconnex Standard Series Server Cabinet is the ultimate solution designed and engineered for demanding data center environments. It is perfect for high-density environments where weight is a ...

[See details](#)



ECX (Standard) Cabinet

Vertical Cable Manager for 48U and 52U ECX (Standard) Cabinet

Inlet-Metered PDU (0U) - IEC Input Plug


Switched and Inlet-Metered PDU (0U) - IEC Input Plug

Inlet-Metered PDU (0U) - NEMA Input Plug

Search = "ECX-MV"

Search Our Store

PRODUCTS





Inlet-Metered PDU (0U) - IEC Input Plug
PDUs / Metered PDUs

Inlet-Metered PDU (0U) - IEC Input Plug

Inlet-Metered PDU (0U) - NEMA Input Plug

Applications:

- Environments that require energy metering
- MDF, IDF, Data Center, Computer Room, Data Room Environment
- Colocation facilities



Q3 Results!



- Leads Q3: 153 (Goal: 125)
- Opportunities: \$1,694,620. Closed won: \$204k
- Website visits: Up 99% YOY
- Website performance score: "A"

What worked:

- Integrated Marcom campaign approach
- Commitment to content, SEO, keyword management
- Paid search
- Biz dev

Q4 Focus



- **Go Live with new Ecwid Catalog site! Any day now!**
- **Refresh Main site home page-Lead gen focus**
- **Drive 150 leads**
- **Content! 12 blogs, 12 emails, 350 social posts, 6 videos**
- **Increase website traffic 10%**

Q4 Product Launches



- TAA PDUs
- Industrial EdgeRack 8M
- Prepare for Q1 InfiniRack Launch
- Prepare for Q1 EdgeRack 5M Launch



New TAA PDU Video



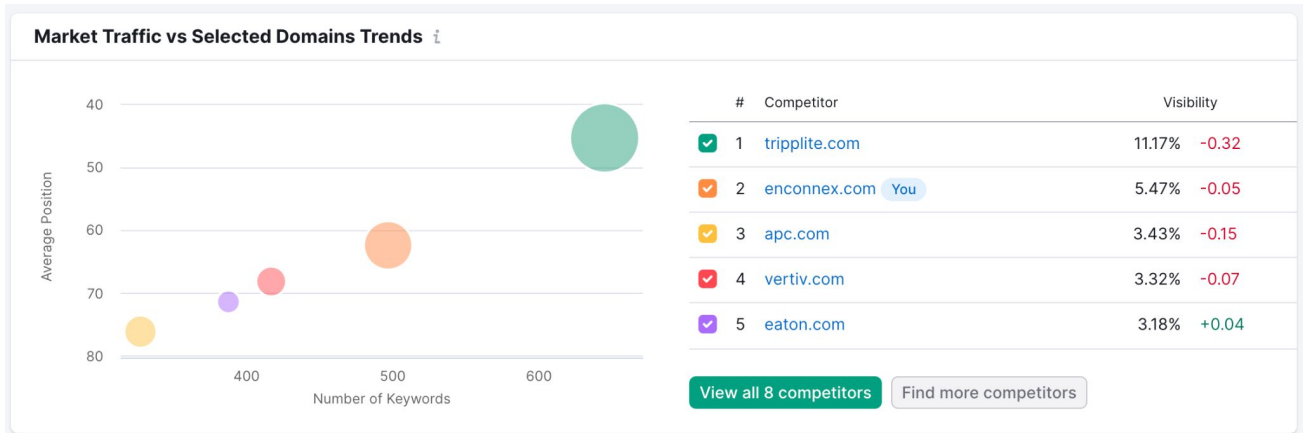
Web Performance

Keyword Rankings:

- Device test rack - #3 (new)
- Rack and stack management - #6 (new)
- What is a network cabinet - #4 (+71)
- 1 phase PDU - #5 (+10)
- Server rack equipment layout - #4 (+7)
- PDU outlet types - #2 (+3)
- Standard server rack - #2 (+5)

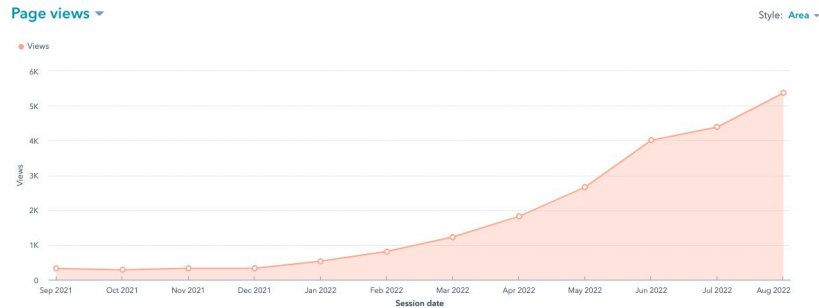
Stats (Q3 2022 vs. Q2 2022):

- 41% increase in overall website visits and 42% increase in new contacts.
- 74% increase in organic visits (from search engines), 39% increase new contacts.
- 78% increase in keywords ranked in the top 10.
- Continued success in SEO vs. competitors.



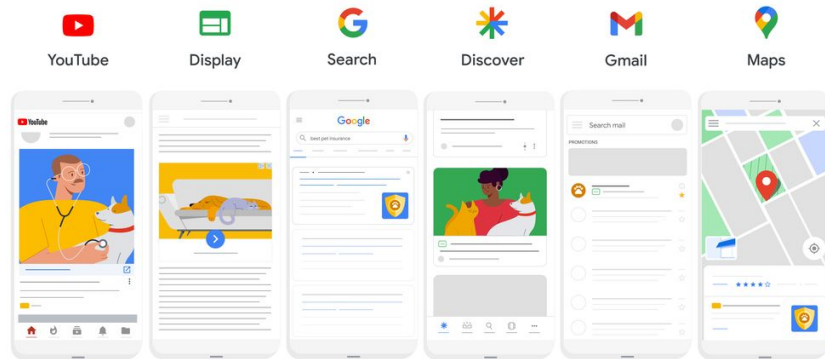
Web Performance - SEO Look Ahead

- The blog and some product pages have been doing the heavy lifting in SEO.
- Big opportunity with configuration-specific keywords.
- About 50% less visible for configuration-specific keywords than general terms.
 - Ex. We're #4 for "Server Rack Power Cables," but unranked for "TPE power cable"
- The new catalog site will eliminate duplicate content and allow us to compete there.



Web Performance - Paid Media Look Ahead

- New catalog site will help with paid search. Better experience gives ad visitors more reason to stay on site and ask about products.
- Going to experiment with new comprehensive ad type called “Performance Max”.



Thank You

