CNI BOOST Q and A

How does the CNI BOOST solution help Service Providers?

- The CNI BOOST Solutions provides power where it is not today and cannot be cost effectively added to support gigabit services
    - (MDU's, strict HOA's or customers, labor intensive to pull power or fiber, etc.)
- The primary purpose of these solutions is to make Gig level speeds available where it otherwise would not be and provide it in a way that makes unserviceable properties serviceable
    - These properties are often too expensive or even impossible to service with Gig level speeds because the method and/or cost of attempting to so do kills most business cases
- The only requirement is the existence of Cat5E or newer cabling
    - ~56 million living units in the US today have Cat5E or newer cabling, but half or more of them are in locations that are not generally upgradable to fiber into the living units without major business case killing expenses
        - Cat5E = up to 1Gig, introduced in 2001 and is the most prevalent cable presented in MDU's and homes today
        - Cat6A = 10 Gig, introduced in 2008, but only recently becoming popular (more time consuming to terminate, but better x-talk isolation) and is still virtually non-existent in the construction space (prices are still slightly higher than Cat5E)
        - Cat7A – 40-100 Gig capable, introduced in 2013, but still not likely to be encountered anywhere or very rarely overall

Does it support XGSPON?

- The product is a remote power solution and is not PON or XGSPON specific, it can serve both ONT types as of today
    - There is a 1 gigabit throughput limitation in this versions chipset, but future revisions will be updated to support speeds greater than the current 1 gigabit standard as the industry migrates in that direction
        - We can do it sooner if we have a customer who is standardizing on the product and requires support beyond 1 gigabit
    - Today the consumers of the Internet rarely have equipment capable of supporting the current 1 gigabit threshold and as previously mentioned almost none of the building wiring out there is newer than Cat5E
        - Most of the devices (NICs, PC's, IOT devices, etc.) are capped at 1gigabit of support as well
        - A quick search will show that while 10 Gigabit NICs are available they are extremely pricey, and most 10 gigabit routers and switches require and SFP interface which again makes them 4 times the cost of conventional solutions
    - Summary – not many people are going to go through the expense right now given no service providers offer it.

Can it extend the rate reach of the Ethernet standard?

- No it cannot. It would be limited to the same standard all Ethernet operates on today (100 meters of cable)
- There are technologies that do that for certain applications, but they ultimately require special cable (100% 24 awg solid core pure copper) and usually a specific NIC to perform at distances beyond 100 meters
- Anything that is extending beyond the standards rate reach has the potential to be an Operations nightmare as they have to support it from installation and repair standpoint and what happens when it no longer works or can't stay up? How do they get the customer back up?
- Summary - cool in the lab, but with no standard to support it and the common use of proprietary hardware, it raises the risk profile far too high for me to ever support or recommend it to partner or customer

- The BOOST Standard which CNI designs and are current with have been revised many times, but was originally introduced in 2000 as a then proprietary solution to power Cisco VOIP phones
- This standard has evolved since then to be an alternative for everything from CCTV cameras, routers, WIFI access points, door access systems, and pretty much anything you can connect to Ethernet
- This same technology has been adopted and/or will be in support of the various 5G solutions that are in use today from most services providers, specifically the Point to Point solutions utilize this same type of solution to power the 5G radio that is placed on the customers premise
- From a safety standpoint it is also safer than any other remote power solution utilized in our industry today as it does not transmit any power until the appropriate device is connected (BOOST capable devices)
    - It uses a software-based handshake to establish whether to turn on the power side of the injector, there has to be a BOOST supported device on the other end or it presents no power
    - This CNI BOOST solution is industrial grade in design and components and is specifically designed for this use case vs. some off the shelf through together version that may have been previously attempted, meaning designed for this application with all the expected performance and safety features in mind.