Overview

NBASE-T ALLIANCE℠

About NBASE-T Alliance

The NBASE-T Alliance was founded in October 2014 to build consensus and accelerate the development of a new 2.5G/5G Ethernet standard. That standard, IEEE 802.3bz, approved in record time in September 2016, is compatible with specifications published by the NBASE-T Alliance. With hundreds of products shipping, the alliance now focuses on publishing optimizations to the specification, facilitating interoperability and educating the market about the multiple applications of the technology.

What is NBASE-T Technology?

NBASE-T technology defines a new type of Ethernet signaling that boosts the speed of Cat5e/Cat6 twisted-pair cabling well beyond the cable's design limit of 1 Gbps, for structured cabling distances up to 100 meters. Delivering up to 2.5 or 5 Gbps over the enormous installed base of Cat5e and Cat6 cabling, NBASE-T solutions enable users to accelerate their networks in the most cost- effective, least disruptive manner. The NBASE-T specification also includes the NBASE-T Downshift protocol that selects, and automatically adjusts as needed, the maximum achievable sustained speed on the link cabling. NBASE-T provides full support for IEEE Std 802.3 Power over Ethernet (802.3af, 802.3at, and the draft 802.3bt) including 4-pair powering.

Milestones

More than 45 companies have joined the alliance, representing all major facets of networking infrastructure such as access points, Ethernet switching, and computing, as well as the necessary technologies required to deliver these applications including physical layer ICs (PHYs), processors, connectors, controllers, switches, FPGAs, Power-over-Ethernet ICs, cables and test equipment.

Individuals from alliance member companies were involved in the IEEE 802.3bz Task Force, which defined the 2.5G/5GBASE-T Ethernet standard approved at record speed in September 2016. The alliance has released NBASE-T PHY interface specifications, and has adopted a first version of a single-port USXGMII MAC-PHY specification. Products based on the NBASE-T PHY Specifications (from 1.1 through 2.3) are shipping.

Applications

The impetus for NBASE-T technology was the new generation of 802.11ac Wave 2 devices that broke thought the 1Gbps barrier imposed by 1000BASE-T. Content is getting richer by the day with the explosive growth of video content, Cloud applications, VR, Gaming, teleconferencing, etc. Consequently, users expect the bandwidth offered by networks to keep pace. The upcoming 802.11ax WiFi standard, and the growing power PCs, Workstations and storage systems to produce, store and consume content, makes the transition from 1Gbps to 2.5 and 5 Gbps an imperative for many users. The migration to faster wireless access technologies, and delivering faster content transfer speeds to many client systems in enterprise, small medium business (SMB), industrial and home environments, is essential.Adoption of these technologies will be enabled by the upgrade of the wired-network infrastructure, with typical examples of NBASE-T deployments falling into four categories: Enterprise, Industrial, Home and Service Providers.

ENTERPRISE

- Indoor/Outdoor Access Points
- Workstations, Desktops, Notebooks
- Enterprise NAS
- Professional Audio Video Systems
- Medical Imaging Systems
- Video Content Editing

INDUSTRIAL

- Industrial/Outdoor Access Points
- Workstations
- Machine Vision Cameras
- Compact Switches

HOME

- Access Points & Routers
- Desktops, Notebooks
- NAS
- Gaming Computers
- Small Cells

SERVICE PROVIDERS

- DOCSIS Home Gateways
- PON ONT Gateways
- Small Cells

Members Shipping Products

Component	AQUANTIA	bel MAGNETIC SOLUTIONS	GLGNET	intel	Kinnex A	MARVELL				
Reference Design	Kinnex A	Microsemi Power Matters.	Pleora Technologies	TEHUTI NETWORKS						
System-Level Product	AQUANTIA	aruba a Hewlett Packard Enterprise company	BROCADE	CISCO	Microsemi Power Matters.	NETGEAR	PROMISE TECHNOLOGY	TELEDYNE e2v Everywhereyoulook		
Test Equipment	AUKUA SYSTEMS	SPIRENT	Tektronix	XENA NETWORKS						

Membership

The NBASE-T Alliance offers three levels of participation: Promoter, Contributor and Adopter.

Promoters

Contributors

Adopters

Leadership

BOARD OF DIRECTORS
Peter Jones, Cisco
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White Papers

NBASE-T 2.5G/5G Ethernet Technology Basis for the IEEE 802.3bz Standard (Multiple Translations Available)

NBASE-T Performance and Cabling Guidelines (Multiple Translations Available)

NBASE-T Downshift: Optimization of 2.5Gb/s and 5Gb/s Ethernet Data Rates over Cat5e/Cat6 Cabling