Schaedler yesco

Emerging Category 6A Cable, Connectivity and Testing Solutions

Products and Solutions for the Electrical Industry

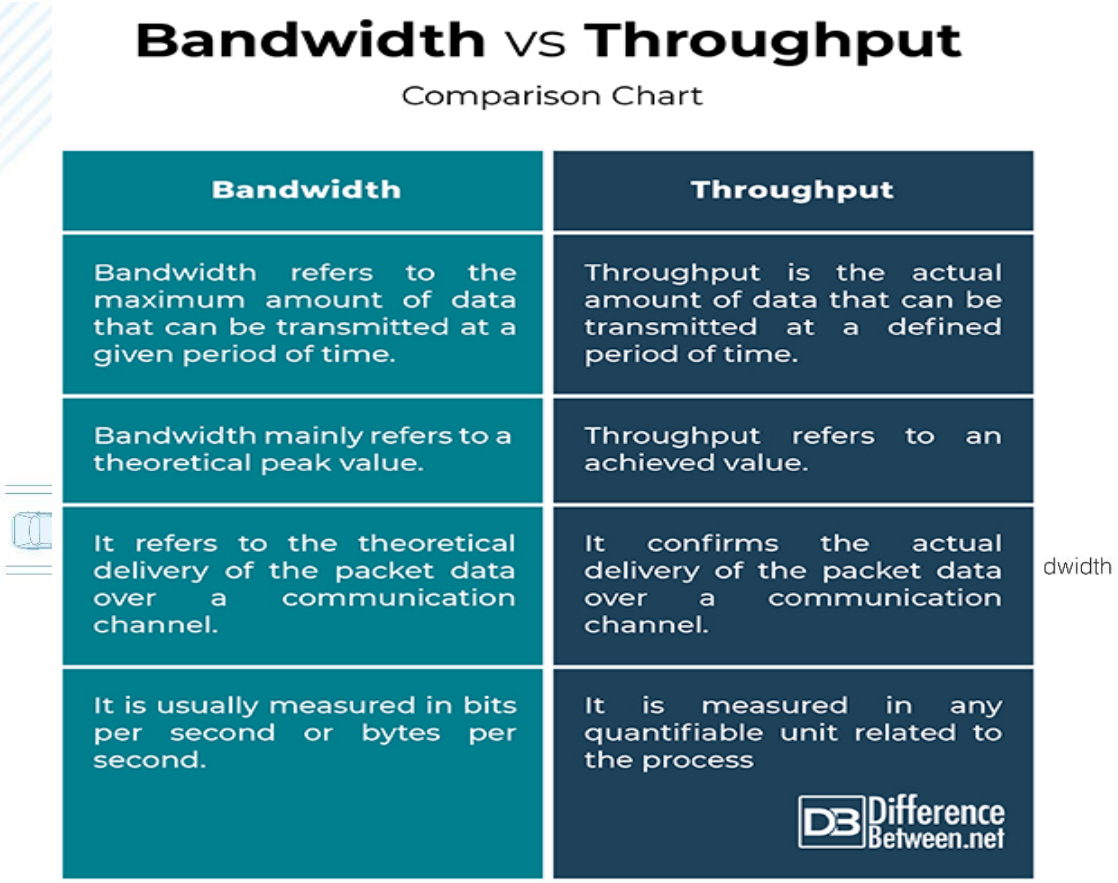
Stephen Tucci

717-233-1621 x2349

stucci@sydist.com

- 26 Years in the Industry
- BICSI Certified Technician
- BICSI Certified Trainer
- Hubbell Mission Critical Certified
- Signamax Certified
- Vivotek Product Expert I

Bandwidth vs. Throughput



Bandwidth vs Throughput

Comparison Chart

Bandwidth	Throughput
Bandwidth refers to the maximum amount of data that can be transmitted at a given period of time.	Throughput is the actual amount of data that can be transmitted at a defined period of time.
Bandwidth mainly refers to a theoretical peak value.	Throughput refers to an achieved value.
It refers to the theoretical delivery of the packet data over a communication channel.	It confirms the actual delivery of the packet data over a communication channel.
It is usually measured in bits per second or bytes per second.	It is measured in any quantifiable unit related to the process

DB Difference Between.net

dwidth

Standards

- Used to help ensure a minimum level of system performance
- Typically created by a group of individuals, businesses, and industry groups
- Define processes and procedures for installation and testing
- Compliance is voluntary unless otherwise stated by contract or law

Standards

ADVANCING GLOBAL COMMUNICATIONS

- TIA-568.0-D, Generic Telecommunications Cabling for Customer Premises
- TIA-568.1-D, Commercial Building Telecommunications Cabling Standard
- TIA-TSB-162-A, Telecommunications Cabling Guidelines for Wireless Access Points
- TIA-1179-A, Healthcare Facility Telecommunications Infrastructure Standard

Applications

- Wireless Access Points
- Healthcare
- AV over UTP
- Power Over Ethernet (PoE)
- 10GBase-T

Wireless

- Guidance from TSB-162-A
- Cabling should support a minimum of 1Gbps, but be specified to support 10GBase-T speeds
- Minimum of two ports of Category 6A performance per WAP location
- Cabling needs to support PoE+ at a minimum but should be designed to support 4PPoE levels and potentially up to 100W

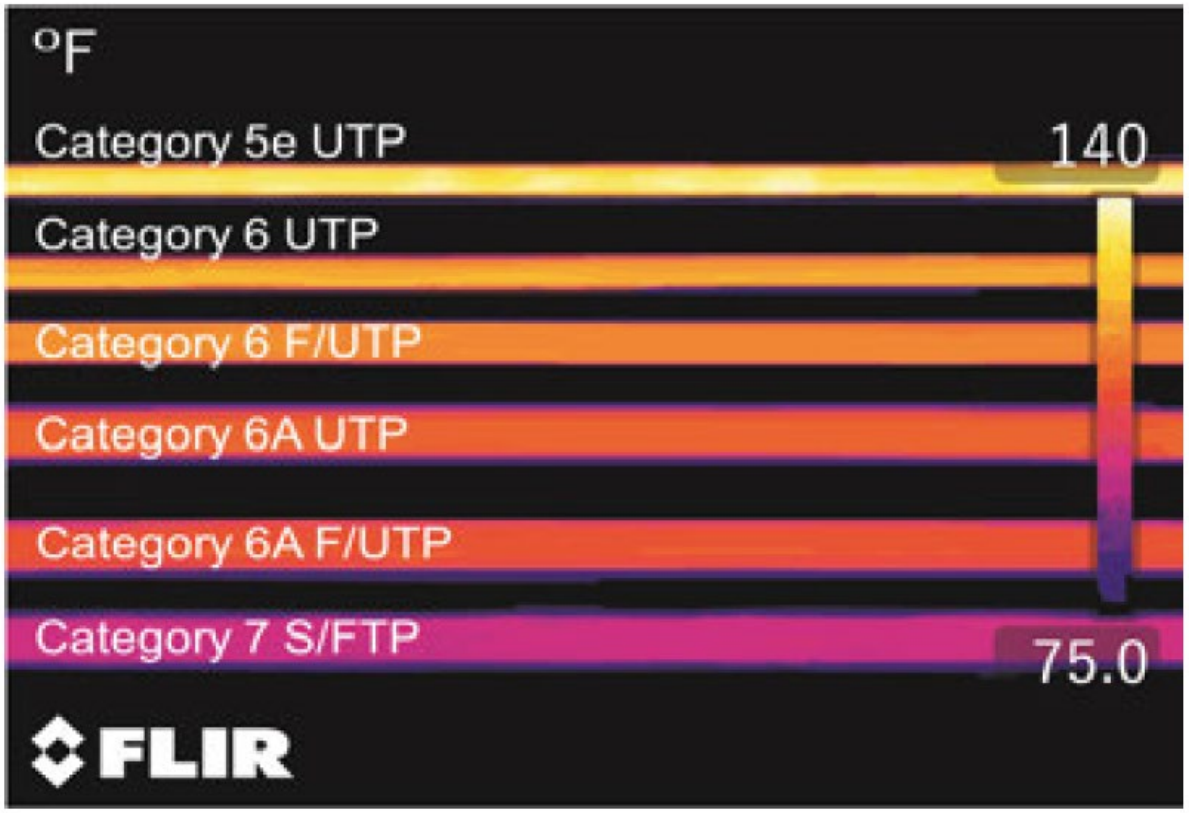
Healthcare

- TIA-1179-A Standard states that Category 6a is the recommended copper cable for both backbone and horizontal applications
- Higher cost of post installation MAC's due to ICRA requirements means a potentially longer service life of the installed cable infrastructure
- Healthcare uses many bandwidth intensive technologies such as EMR's, Digital Imaging, AI, and Robotics to name a few

AV over UTP

- Eliminates reliance on proprietary systems
- “Future Proofs” systems
- Extend displays up to 328 feet from source (application specific)
- Reduces installation and termination time
- Ideal for HDTV’s, Projectors, Public Displays, and many other video display applications

Power Over Ethernet



Power a
at PD

Max po
delivere
PSE

AWG	1 Temp Rating 60°C	75°C	90°C
24	2.0	2.0	2.0
23	2.5	2.5	2.5
22	3.0	3.0	3.0

	92-192 Temp Rating 60°C	75°C	90°C
°C	0.3	0.4	0.5
.6	0.4	0.5	0.6
.8	0.5	0.6	0.7

Ethernet Applications

TIA Category	ISO Category/Class	Applications	Frequency
Category 3	Class C	10BASE-T	16 MHz
Category 5e	Class D	1000BASE-T	100 MHz
Category 6	Class E	1000BASE-T	250 MHz
Category 6A	Class EA	10GBASE-T	500 MHz
N/A	Category 7/Class F	10GBASE-T	600 MHz
N/A	Category 7A/Class FA	10GBASE-T	1000 MHz
Category 8	Category 8.1/Class I	40GBASE-T	2000 MHz
N/A	Category 8.2/Class II	40GBASE-T	2000 MHz

Cat6A vs Cat7 vs Cat8

	Category 6A	Category 7	Category 8
Application	10GBASE-T	10GBASE-T	40GBASE-T
Frequency	500 MHz	600 MHz	2000 MHz
Channel Limit	328ft	328ft	100ft*
Connector Type	8P8C/RJ45	Proprietary	8P8C/RJ45
Cost	$$	$$$$	$$$$$
Availability	Widely Available	Very Few Manufacturers	Very Few Manufacturers

MPTL Testing

- Modular Plug Terminated Link (MPTL) testing permits cables that are terminated using a channel level plug to be tested and certified
- Primarily used for connections to Wireless Access Points and CCTV Cameras
- Specialized test adapters are required, consult with your sales person or manufacturer of your test equipment for more information
- Added to TIA-568.5-D in 2018

Trend Networks LANTEK IV-S

- 7 Second Test Time
- Certifies up to Cat 8
- Capable of testing up to 3000MHz
- Trend AnyWARE cloud enabled
- VisiLINQ test adapters increase testing efficiency
- Optional Sapphire Care Plans available

Products and Solutions for the Electrical Industry

1-800-998-1621 • www.sydist.com

Schaedler yesco