

# Universal Application Score



## What is the Leviton UA Score?

The Leviton Universal Application (UA) Score measures how a cabling system will perform under the strain of future demand. Calculated using a proprietary algorithm that combines the results of four different performance tests, the score represents long term system performance more accurately than traditional testing methods.

## How is the Universal Application Score (UA Score) calculated?

The UA Score is calculated by using the results of application based testing done in a unique four connector, 100 meter channel. The channel is unique because VoIP, Data, Video, and Power are transmitted simultaneously through the channel, and it includes simulated hot plenum spaces as well as nearby power cables throwing off voltage spikes. All of this is done to replicate real-world conditions as closely as possible in the lab.

We take the results of the VoIP quality (MOS), the Data quality (FER), and Video quality (MLR), and enter the results into a proprietary algorithm that weights the results according to how sensitive the IP traffic is to errors. For example, VoIP and video IP traffic are weighted heavily because they usually use protocols such as UDP or RTP where packets with errors are dropped. Due to time constraints of the application, there is no resend. Conversely, data traffic typically uses a protocol like TCP/IP which isn't as time sensitive, so resend requests are sent. Therefore, Frame Error Rate (FER) test results for data applications are not weighted as heavily as the results for Media Loss Rate (MLR) for video and Mean Opinion Score (MOS) for VoIP. Additionally, the results from a separate high power PoE test are used in the calculation. The PoE test determines how efficient the cabling is in dissipating/minimizing temperature rise.

## What does a high UA Score like 8.6 actually mean?

The UA Score provides a measurement of IP infrastructure performance in a real-world environment when multiple applications converge, such as IP video, VoIP, Data, and PoE. The better protected your IP traffic is from the stress of multiple simultaneous applications, noise, and heat, the better the score. A UA Score of 8.6 means that your IP infrastructure performance is outstanding, resulting in near flawless application performance, and that there is relatively low heat rise under the strain of high power PoE. Conversely, a low UA Score such as 3.6 would mean you could expect to see and hear flaws (errors) and encounter frustrating delays. For example, VoIP calls would usually sound choppy, streaming video would have regular interruptions (many per hour) in both audio and visual quality, and files would take longer to open.

## If Cat 6 is a standard, can't I purchase any Cat 6 and have satisfactory performance?

It depends on what you want out of your network over its anticipated lifetime. If you determine that your wireless network will be "fast enough" for your business needs over the next "X" number of years using 1Gbps technology, then any Cat 6 system will suffice. However, if you need a wireless network that remains both fast and responsive over the years for your employees, customers, and guests, then you should invest in Cat 6A, regardless of the size of your business. If you have a small business, you will need fewer access points and less cabling than a larger office. However, investing in Cat 6A is the only way you can realize the full potential of each access point that is equipped with Wi-Fi 5 or Wi-Fi 6 wireless technology.

## **Why is the UA Score algorithm proprietary to Leviton?**

Leviton has invested millions of dollars into R&D to develop products that will support future demands on network infrastructure. Developing the UA Score was an investment in itself, and it was created to measure the results of our new materials, designs, and processes. Therefore, we are happy to explain the testing we do and the inputs used to calculate the UA Score. However, the exact calculations used are proprietary to Leviton in order to protect the investments we have made to develop them.

## **How can I compare other manufacturers' UA Scores?**

Currently, the only way to compare another manufacturer's UA Score is for Leviton to conduct the testing and report the results. Leviton has tested several other manufacturers' products, and those results are available upon request. As a policy, Leviton does not report other competitor results by name. Its intent is to report results in a neutral format.

## **I have a small office of <50 employees. Do I really need Category 6A for my WAPs?**

It depends on what you want out of your network over its anticipated lifetime. If you determine that your wireless network will be "fast enough" for your business needs over the next "X" number of years using 1Gbps technology, then the answer is no. However, if you need a wireless network that remains both fast and responsive over the years for your employees, customers, and guests, then you should invest in Cat 6A, regardless of the size of your business. If you have a small business, you will need fewer access points and less cabling than a larger office. However, investing in Cat 6A is the only way you can realize the full potential of each access point that is equipped with Wi-Fi 5 and future wireless technology.

## **I have a separate network for my VoIP phones, my IP Video, and my Data. Why would I care about converging applications when I keep separate networks?**

In a lot of cases, customers plug a VoIP phone to a wall outlet and another patch cord from the VoIP phone to the computer. In this case, and especially if you have multiple monitors, your network could be carrying voice, data, video, and power simultaneously. But even if you are just connecting a VoIP phone, you can be (or could be at some point in the future) using the VoIP phone for live video conferencing where you would be transmitting voice, power, and video at the same time. If you are connecting only video screens or digital signage, at some point in the near future, you will be able to power those screens and transmit video (and audio) to them simultaneously. This will require a lot of power, and at some point in the pathway, the cabling will likely be grouped into larger bundles also carrying power. No matter how you slice it, everything is going IP, and network applications are converging while we connect and power through the network infrastructure.

## **Will the UA Score automatically be higher if a higher grade of cable is used for the testing? For example, a Cat 6A cable versus a Cat 6 cable?**

Not necessarily. The UA Score is blind to the product that is used during testing. It is completely dependent on the test results used in calculating the score. Currently all voice, data, video, and power testing is done using 1Gbps data rate.