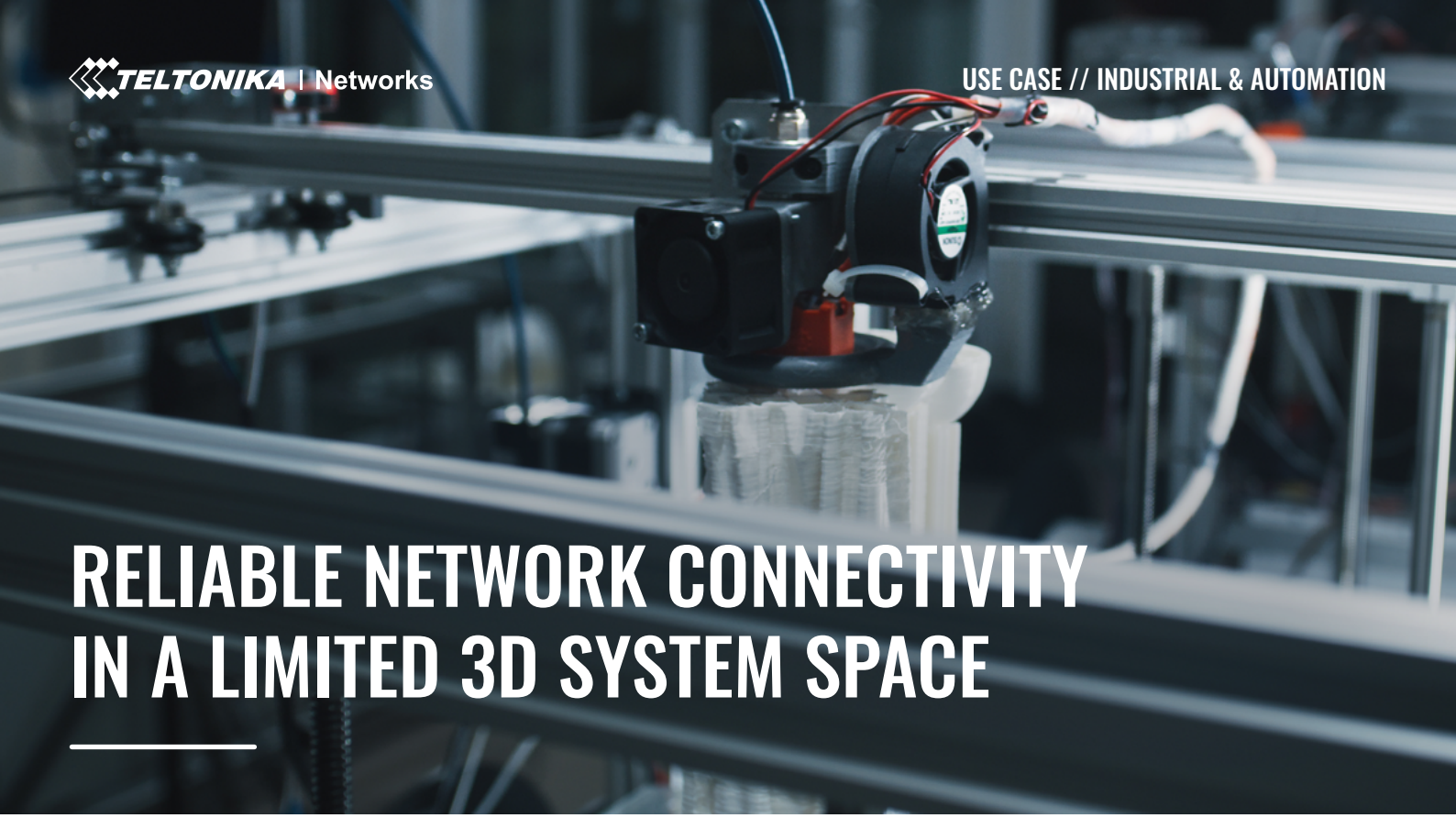


RELIABLE NETWORK CONNECTIVITY IN A LIMITED 3D SYSTEM SPACE

SUMMARY

Remember when 3D printers were taken by storm due to their simple but fascinating use, now known to be remarkably versatile? This invention was so innovative and entertaining that jokes like using 3D printers to print other 3D printers began to spread. But all of that aside, the 3D printer's popularity and significance continue to grow.

Just think – with 3D printers you can digitally design all kinds of doodles and then let the printer do its magic and turn your digital constructions into real, physical objects. Of course, this technology isn't meant for doodles only; it can manufacture extremely complex objects without requiring as much material as traditional manufacturing methods.

CHALLENGE

Like many other manufacturing systems, 3D printing equipment consists of a number of different machines working in tandem to operate smoothly. Space within that system is limited, as digital screens, 3D printers, robotic arms, and post-curing devices all play an important role. Digital screens allow you to see information about the entire printing process, 3D printers... well, print. Robotic arms move the product through the subsystems, and post-curing devices remove resin and finalize product solidification by exposing it to UV light.

The biggest challenge is ensuring manufacturing optimization, analysis, and real-time monitoring achievable through a reliable and uninterrupted network. The connectivity of that network will also allow for system data collection and notifications on estimated maintenance demand. But how do you provide connectivity to the entire system when its setup doesn't leave that much space for additional devices?

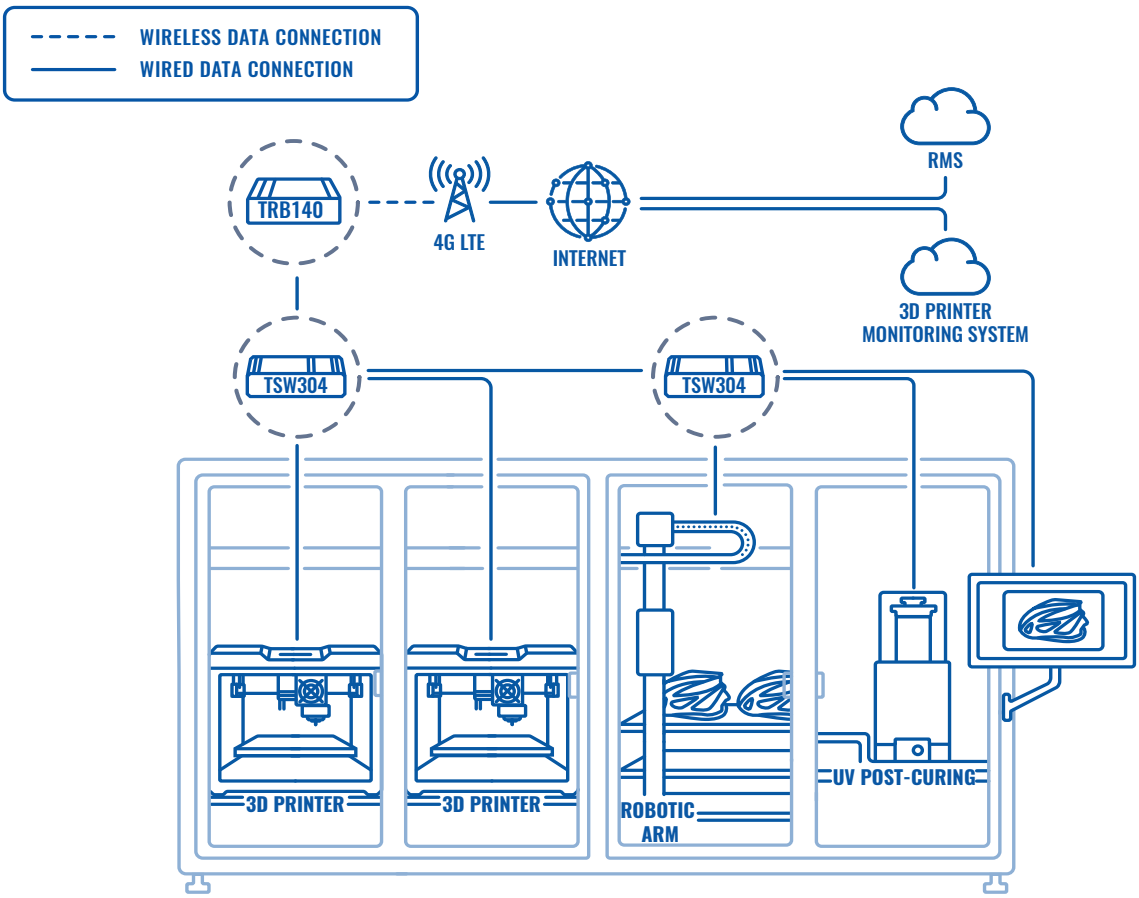
SOLUTION

Considering the 3D printing system's limited space, a small device capable of easy mounting is needed. Luckily, our unmanaged TSW304 switch has been specifically designed to fit any industrial environment, which makes it a perfect solution for this case. With its integrated DIN rail mount, this switch can be easily attached to the DIN rail without needing additional mounting accessories.

Its size also plays a critical role when the solution requires more than one switch, such as in this case. With dimensions of 102 x 25 x 81.5 mm, the TSW304 qualifies as the smallest switch in our catalog and is ideal for placing multiple switches next to each other. This feature allows you to use as many switches as you need to connect different system elements like in this case. Two switches support all 3D printing system devices with network connectivity without taking up much space at all.

Of course, this wouldn't be as cool if the switch didn't support excellent network connectivity. But it does! With this switch, the 3D printing system is equipped with great network connectivity and convenient device installation. The TSW304 switch supports reliable throughput through four ports, each reaching speeds up to 1000Mbps while being plugged into a TRB140 gateway. This switch feature makes monitoring the 3D printing system and transferring heavy data files easy. TSW304 also supports between 7 to 57 VDC, which makes the device easily applicable in complex mechanical setups.

TOPOLOGY



BENEFITS

• The TSW304 is our first-ever switch with a DIN rail integral mount, making its installation super easy and convenient on any kind of surface;

• Small but mighty – the TSW304 is only 10.2 cm long but ensures seamless network connectivity transmission to your devices;

• Its four ports, capable of reaching speeds up to 1000Mbps, can provide immediate data throughput that is especially crucial for real-time monitoring;

• The unmanaged TSW304 switch is what you'd call a plug-n-play device – it doesn't require any additional configurations, so it makes the device easy to use.

WHY TELTONIKA NETWORKS?

Each of our clients has a challenge that needs solving. That's why versatility is the name of the game in our product design. TSW304 is no exception – this new addition to our collection of switches is highly flexible and easy to fit in any environment. Due to the continuous growth of our device portfolio, we provide simple yet reliable solutions that can be easily adapted to your IoT needs.