CELLULAR ROUTER FOR UNITING NEW AND LEGACY CNC MACHINES

HIGHLIGHTS

CNC machines stand as one of the most effective methods for manufacturing a diverse range of products, like customisable furniture or medical instruments. However, they require robust connectivity and multiple protocols to enable M2M communication, particularly when integrating new and legacy CNC machines into a unified ecosystem.

To address challenges like these, the Teltonika Networks RUT956 4G cellular router was chosen. With multiple interfaces, such as Ethernet, RS232, and RS485, the RUT956 router ensures excellent adaptability in the face of diverse communication needs.

This 4G LTE cellular router also supports multiple industrial protocols, like MQTT, OPC UA, and Modbus, necessary for a high level of applicability and smooth data processing within complex network infrastructure.

THE CHALLENGE – ALL-FOR-ONE NETWORK ECOSYSTEM

NC machines are indispensable in multiple industries. Ranging from aerospace to medical device manufacturing, they're often selected as the preferred production tool. The appeal of CNC machines lies in their manufacturing precision and ability to run 24/7 with minimal supervision, which sounds like music to the ears to those seeking peak efficiency.

However, such efficiency and precision come at a significant cost. CNC machines can be quite expensive, with top-of-the-line models reaching up to $500,000. Given this investment, owners are naturally inclined to extract maximum value and extend the lifespan of their machines as much as possible in a rapidly evolving industry.

All CNC machines require reliable connectivity to receive operational commands, retrieve and transmit data, and maintain smooth and uninterrupted manufacturing processes. Otherwise, the core advantages of such machines cannot be guaranteed.

Differences in production times among CNC machines lead to varied support for machine-to-machine (M2M) communication protocols. This type of difference affects the timing and methods of data readings and transmissions for each piece of equipment.

Consequently, integrating new CNC machines with existing or older ones into a unified system becomes more complex and costly, as differing protocols may require extra equipment or data readers. Suddenly, this turns into a riddle begging to be solved.

TOPOLOGY
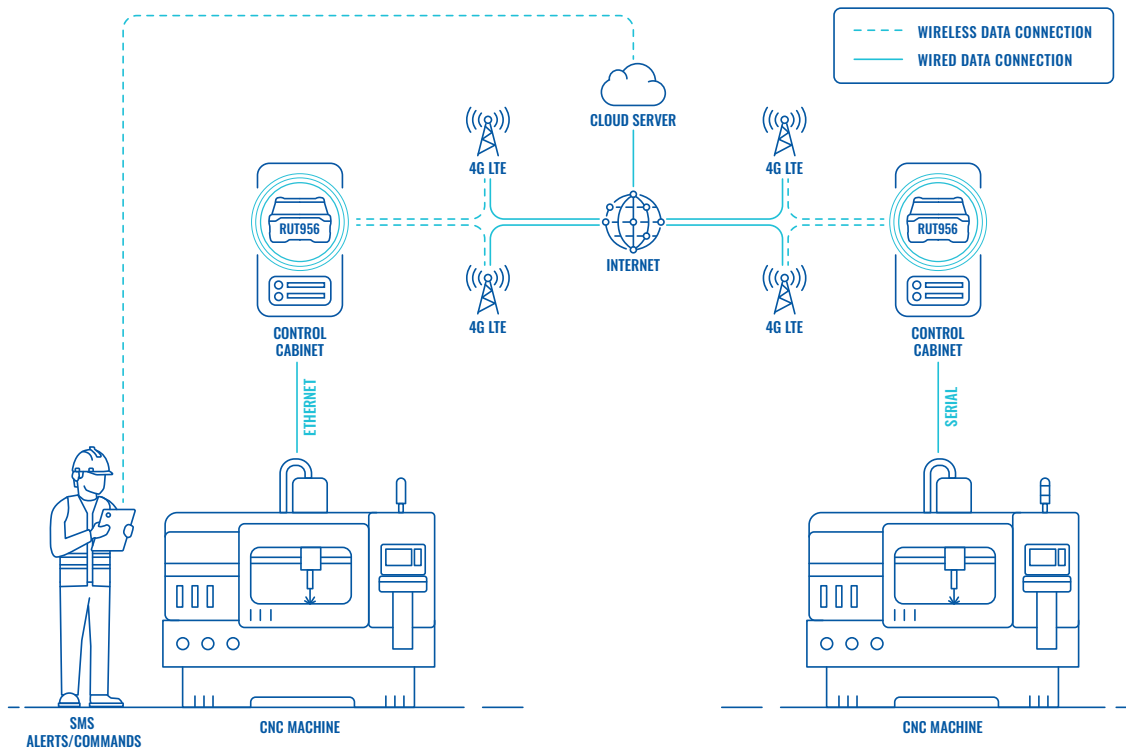
THE SOLUTION – ONE-FOR-ALL CELLULAR ROUTER

The RUT956 cellular router ensures strong wireless network connectivity for the entire IoT solution, seamlessly integrating every component into a cohesive system. This includes both new and existing CNC machines. Care to know exactly how?

The router is famous for its versatility and is often referred to as a Swiss army knife, providing abundant connectivity and configuration options at your fingertips. The RUT956 supports cellular, Wi-Fi, and wired WAN connections, all configurable for failover. This wealth of connectivity options and failover functionality ensures uninterrupted Internet access at all times.

The RUT956 cellular router comes equipped with 4 LAN ports as well as RS485 and RS232 interfaces, which are vital for integrating a diverse array of components. Multiple interfaces allow the router to support a huge array of M2M communication protocols, including MQTT, OPC UA, and Modbus, thereby eliminating the need for extra data converters. So, be they new or legacy CNC machines, this cellular router unites all of them into a seamless ecosystem.

The RUT956 is also a dual SIM router, enabling not only mobile Internet connectivity but also facilitates remote management and monitoring via SIM-based messages or calls. CNC machine operators can access equipment data by messaging the router directly. Additionally, the RUT956 can be configured to notify operators via messages or calls in case of incidents, such as production errors, ensuring prompt awareness and response.

All these advantages make the RUT956 cellular router an outstanding choice that offers reliable network connectivity and serves as an alert system whenever CNC machines experience any production issue.