



# DDR5 Industrial Temperature ECC SODIMM

## Enterprise Switching Equipment



### Hardware Configuration

- 1U rack-mount chassis
- High-performance multi-core ARM A53 CPU
- 2x DDR5 industrial temperature ECC SODIMM slots
- 2x 32GB DDR5 ECC SODIMMs (64GB total)
- Speed: 5600 MT/s
- Operating temperature range: -40°C to +85°C

### Performance Metrics

- Switching capacity: 2 Tbps
- Forwarding rate: 1488 Mpps
- Latency: 0.7μs
- Packet buffer: 36MB2

### Introduction

SMART's DDR5 industrial temperature ECC SODIMMs offer significant advantages for enterprise telecom switch equipment, particularly in demanding environments where high performance, reliability, and temperature resilience are essential.

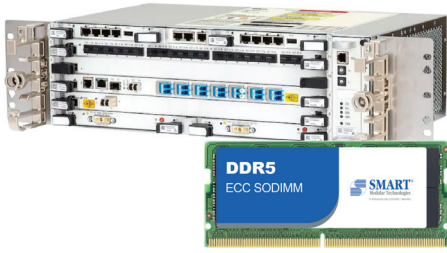
### Enterprise Telecom Switch with DDR5 Industrial Temperature ECC SODIMM Integration

A leading networking equipment manufacturer is developing a next-generation enterprise-grade telecom switch for deployment in various challenging environments. The switch needs to process massive amounts of network traffic while maintaining reliability in extreme temperature conditions.

### Key Benefits

1. **Space Efficiency:** The ECC SODIMM design, with a width of 69.60mm and high of 31.25mm, allows for horizontal placement in the 1U chassis, maximizing available space for other components, including underneath the ECC SODIMM.
2. **High Performance:** With speeds up to 5600 MT/s, the DDR5 modules provide the bandwidth necessary for handling high-speed network traffic in enterprise telecom applications.
3. **Error Correction:** ECC functionality is essential for maintaining data integrity in mission-critical telecom operations, where each bit of data is important.
4. **Temperature Resilience:** The industrial temperature range (-40°C to +85°C) ensures consistent performance in variable and harsh environmental conditions often encountered in telecom installations.
5. **Reliability:** Anti-sulfuration protection and 30μ" gold fingers enhance the modules' durability in challenging environments.
6. **Power Efficiency:** DDR5 technology offers improved power management with an on-DIMM 12V voltage regulator (PMIC) and 1.1V I/O voltage, contributing to the overall energy efficiency of the telecom switch.
7. **Optional heat spreaders** can also be used for additional heat dissipation.

## Use Case Scenario



A major telecommunications provider deploys this enterprise switch in its network infrastructure across various locations, including remote areas with extreme temperature fluctuations. The switch, equipped with SMART's DDR5 industrial temperature ECC SODIMMs, continuously processes and routes network traffic, utilizing the high-speed memory to handle peak loads during high-usage periods.

The compact 1U design, made possible by the ECC SODIMMs, allows the provider to install multiple switches in their limited rack space, providing comprehensive coverage without sacrificing other essential equipment.

The ECC functionality ensures data integrity, critical for maintaining service quality and preventing errors in data transmission. The industrial temperature rating allows the switch to operate reliably in both extremely cold and hot environments, from arctic regions to desert climates, without the need for additional cooling or heating equipment.

The high performance of the DDR5 memory enables the switch to efficiently manage complex networking tasks, such as Quality of Service (QoS) management, security filtering, and advanced routing protocols. The improved power efficiency of DDR5 technology also contributes to reduced operational costs and aligns with the telecom provider's sustainability goals.

By leveraging the advanced features of SMART's DDR5 industrial temperature ECC SODIMMs, this enterprise telecom switch sets a new standard for performance, reliability, and environmental adaptability in networking equipment. It addresses the growing needs of telecom providers for robust, high-performance solutions capable of operating in diverse and challenging environments while maintaining the highest levels of data integrity and service quality.

SMART's DDR5-5600 industrial temperature ECC UDIMMs; 16GB, 32GB 48GB (DDR5-6400 Q2'25) visit: <https://www.smartm.com/product/ddr5-ecc-sodimm>



For more information, please visit: [www.smartm.com](http://www.smartm.com)

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