EEPROM vs SD Card

Which One Should You Use ?

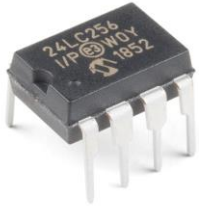
AZMAN BAKHTIAR
Embedded Developer

- Not all memory types fit all projects.
- Wrong choice can increase cost and complexity.
- Consider speed, size, cost, and write cycles.
- EEPROM and SD cards are popular options.
- Let's compare both in a simple way.
- Make smart decisions early in development.

AZMAN BAKHTIAR
Embedded Developer

EEPROM – Small, Reliable, and Simple

- Great for small data like settings or logs.
- Has low power usage, ideal for battery devices.
- Non-volatile – keeps data even after power off.
- Easy to connect with I2C or SPI.
- Slower write speeds, but stable and consistent.
- Limited write cycles – use carefully for frequent updates.



AZMAN BAKHTIAR
Embedded Developer

SD Card – Big Storage, More Complexity

- Perfect for large files like audio or logs.
- Offers gigabytes of space at low cost.
- Needs a proper file system like FAT32.
- Requires initialization and error handling code.
- Higher power consumption compared to EEPROM.
- Can be removed or replaced by user easily.

AZMAN BAKHTIAR
Embedded Developer

Simple Comparison

Feature	EEPROM	SD Card
Storage Size	Small (Bytes–KBs)	Large (MBs–GBs)
Interface Simplicity	Very simple	More complex
Power Consumption	Very low	Moderate to high
Removability	Not removable	Easily removable
Write Speed	Slower	Faster
File System	Not needed	FAT32 required

AZMAN BAKHTIAR
Embedded Developer

When to Use EEPROM

- Perfect for storing small device settings
- Great when data changes are very rare
- Ideal for low-power, compact systems

When to Use SD Card

- Best for logging large or continuous data
- Suitable when users need file access
- Works well in high-data applications

AZMAN BAKHTIAR
Embedded Developer

AZMAN BAKHTIAR
Embedded Developer

Reach Out for Free IoT & Embedded Consultation

Reshare if You Found it Helpful