World’s First Automotive-Qualified
2Mbit SPI EEPROM

M95M02-A125
EEPROMs make Applications Smarter

- Flexible for parameter update
- High endurance Cycling - Retention
- Adapts easily with scalability in package and densities
- Reliable device suited for 0 defect approach

High quality and Flexible parameter management
2Mbit EEPROM memory in SO8N

- 2Mbit reliable memory array
  - 256 Kbytes with embedded Error Correction Code (ECC)
  - Additional IDentification Lockable page
  - Page size of 256 bytes
  - Page Programing time 5ms
  - SPI bus 10MHz at 5V
  - More than 100 years retention

- SO8N package
  - RoHs and Leadfree compliant
  - AEC-Q100 Grade1 qualified (-40°C to +125°C)
Safer data

• Additional Lockable page of 256 bytes
  • Delivered with 3 ID bytes for software identification
  • Access with specific instruction set
  • Store your most sensitive data
  • Lockable in read only mode at anytime
Fast parameter loading
SPI bus: robust 4 wires interface with Fast Clock

- 10MHz at 105°C and 5V Power supply
  - Sequential read of 256Kbytes (2Mbit) in less than 250ms or 0.25 sec

- 5MHz at 125°C, with 5V or 3.3V Power supply
  - Sequential read of 256Kbytes (2Mbit) in less than 500ms or 0.5 sec
  - Reduced power consumption
Convenient Event Data Recording

• Storage of 256 bytes in 1 single page write instruction
  • Single shot Instruction takes only 210µs for 1 full page of 256 data bytes
  • Followed by self-timed programming cycle of 5ms

• Fast write time: 5ms for 256 bytes
  • Same for 1 byte or 1 page (256 bytes) in 5ms
  • 256K bytes can be stored in 5 sec.
Monitoring & Datalog

• Extended byte endurance for easy Monitoring
  • **20000 hours** at 25°C operation with **1 Cycle/15sec**
    \[\Rightarrow 4 \text{ Million cycles on a single byte}\]
  • **20000 hours** at 85°C operation with **1 Cycle/min.**
    \[\Rightarrow 1.2 \text{ Million cycles on a single byte}\]

• Over 100 Million cycles per device for Very frequent updates
  • **20000h** operating with **1 Cycle/sec.** \(\Rightarrow 72 \text{ Million cycles}\)*
  • **Using 1 page 14 parameters could be cycled simultaneously every second**

*Cycles must be distributed over several bytes locations in order to keep byte cycling endurance inside authorized profile. For 72 Million cycles at 25°C, 18 bytes of the same page works.
Low power consumption  
*Compared to others NVM*

- Less than 2mA in Write mode
  - Max. 2mA current consumption during write cycle time (Average 1mA)
  - Unexpected Power down: Supply EEPROM from small backup capacitor

- Less than 1mA in Read mode at 5MHz
  - Max 5mA at 10Mhz and 3mA at 5Mhz
  - Average 1mA at 5MHz and 600µA at 2MHz
Third parties Programmer for 2 Mbit

- Third Parties for EEPROM Programmers
  - Dediprog model EE-100
  - Leap model LP-56
- And you will find on our website other partners:
New 2Mbit for a Safer and Greener Trip

M95M02-A125: Highest EEPROM size
- Fast parameter loading at power up
- Event recording with large page size
- High endurance, Real time monitoring
- High reliability and quality
- ROHS and Leadfree package

ST EEPROM service
- IBIS and Verilog models
- EEPROM Programmer partners
- Easy Buy-on-Line through our Distributors

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Thank you!

ST stands for *life.augmented*