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This section describes the different memories in the LGT8FX8P series. The LGT8XM architecture has two main memory spaces, Data Memory and the Program Memory space. *The LGT8FX8P contains internal FLASH that is designed to emulate EEPROM data storage. In addition, the LGT8FX8P also includes a special memory space for storing system configuration information and the chip's global device number (GUID).*

This section describes the different memories in the ATmega48P/88P/168P/328P. The AVR architecture has two main memory spaces, the Data Memory and the Program Memory space. In addition, the ATmega48P/88P/168P/328P features an EEPROM Memory for data storage. All three memory spaces are linear and regular.

This section mainly describes the different memory cells inside the LGT8FX8P series. The LGT8XM architecture supports two main internal storage spaces, data storage space and program storage space. The LGT8FX8P also contains data FLASH internally, and the internal controller can realize the data storage function of the EEPROM interface. In addition, the LGT8FX8P system also includes a special storage unit for storing system configuration information and the chip's global device number (GUID).

NOTE check my text versus the translation here I used a bit of artistic license to sculpt the message into something that makes sense to me. Technical content specific corrections welcome

本章节主要描述 LGT8FX8P 系列内部不同的存储单元。LGT8XM 构架支持两种主要的内部存储空间,分别是数据存储空间和程序存储空间。LGT8FX8P 内部也包含了数据 FLASH,通过内部的控制器可以实现 EEPROM 接口的数据存储功能。另外,LGT8FX8P 系统中还包含了特殊的存储单元,用于存放系统配置信息以及芯片的全局设备号(GUID)。

LGT8FX8P series chips include three different models: LGT8F88P/168P/328P. The three packages are fully compatible. The differences are the sizes of the FLASH and SRAM memory available. The following table describes the LGT8FX8P memory configuration options by model:

(this is unique to the LGT DS)

LGT8FX8P series chips include four different models of LGT8F88P/168P/328P; the four types of peripherals and packages are fully compatible, the difference is the FLASH program storage space and internal data SRAM. The following table clearly describes the LGT8FX8P series chips. Different storage space configurations:

LGT8FX8P 系列芯片包含了 LGT8F88P/168P/328P 四种不同的型号;四种型号的外设以及封装完全兼容,所不同是 FLASH 程序存储空间以及内部数据 SRAM,下面的表格比较清楚的描述了 LGT8FX8P 系列芯片不同的存储空间配置:

The emulated E2PROM memory space of the LGT8F328P does not have a separate storage location separate from FLASH. The storage space for emulating the E2PROM is shared with the program FLASH. The user can select the appropriate partition configuration according to their application requirements.

(this is unique to the LGT DS)

The LGT8F328P does not have a separate FLASH space for simulating the E2PROM interface. The storage space for emulating the E2PROM is shared with the program FLASH. The user can select the appropriate configuration according to the application requirements.
LGT8F328P 内部没有独立用于模拟 E2PROM 接口的 FLASH 空间;用于模拟 E2PROM 的存储空间与程序 FLASH 共享,用户可以根据应用需求,选择合适的配置。

Due to the unique implementation of the emulated E2PROM interface, the system requires twice the program FLASH space to simulate an E2PROM memory space. With the LGT8F328P, for example, if the user configures a 1KB E2PROM, 2KB bytes of FLASH memory will be reserved, leaving 30KB for program memory space.

(this is unique to the LGT DS)

Due to the unique implementation of the analog E2PROM interface, the system requires twice the program FLASH space to simulate the E2PROM memory space. For example, for the LGT8F328P, if the user configures 1KB of E2PROM space, 2KB bytes of program space will be reserved, leaving 30KB. The FLASH space is used to store programs.
由于模拟 E2PROM 接口采用的独特实现,系统需要两倍的程序 FLASH 空间模拟 E2PROM 存储空间,比如对于 LGT8F328P,如果用户配置了 1KB 的 E2PROM 空间,将会有 2KB 字节的程序空间被保留,剩下 30KB 的 FLASH 空间用于存储程序。

LGT8F328P program FLASH and E2PROM shared configuration table:
LGT8F328P 程序 FLASH 与 E2PROM 共享配置表:

FLASH
System programmable FLASH program storage unit
系统可编程 FLASH 程序存储单元

The LGT8FX8P series of microcontrollers each include 8K/16K/32K bytes of on-chip programmable FLASH memory.

The ATmega48P/88P/168P/328P contains 4/8/16/32K bytes On-chip In-System Reprogrammable Flash memory for program storage.

The LGT8FX8P series of microcontrollers each include 8K/16K/32K bytes of on-chip programmable FLASH program memory unit.
LGT8FX8P 系列微控制器内部分别包括 8K/16K/32K 字节的片上在线可编程 FLASH 程序存储单元。

The program FLASH guarantees at least 100,000 erase cycles. The LGT8FX8P integrates a FLASH interface controller that enables self-upgrade in system programming (ISP) and programs. For specific implementation details, please refer to the description of the FLASH interface controller section in this chapter.

The Flash memory has an endurance of at least 10,000 write/erase cycles **see below

The program FLASH guarantees at least 100,000 erase cycles. The LGT8FX8P integrates a FLASH interface controller that enables self-upgrade in system programming (ISP) and programs. For specific implementation details, please refer to the description of the FLASH interface controller section in this chapter.
程序 FLASH 能保证至少 100,000 次以上的擦写周期。LGT8FX8P 内部集成 FLASH 接口控制器,能够实现在系统编程(ISP)以及程序的自升级功能。具体实现细节请参考本章在关于 FLASH 接口控制器部分的描述。

NOTES: this is the section LGT was copying from the ATMEL DS for the last two paragraphs of text. It's slightly odd that they packaged these two short sections as two separate statements of text. If you look at the section below it reveals a lot more. I have highlighted the two lines they semi-copied. Someone obviously intentionally omitted all of the information in between. They decided to keep one line from each paragraph, the rest of the information shows the difference between devices.
The ATmega48P/88P/168P/328P contains 4/8/16/32K bytes On-chip In-System Reprogramma-ble Flash memory for program storage. Since all AVR instructions are 16 or 32 bits wide, the Flash is organized as 2/4/8/16K x 16. For software security, the Flash Program memory space is divided into two sections, Boot Loader Section and Application Program Section in ATmega88P and ATmega168P. ATmega48P does not have separate Boot Loader and Application Program sections, and the SPM instruction can be executed from the entire Flash. See SELFPRGEN description in section "SPMCSR – Store Program Memory Control and Status Register" on page 275 and page 292for more details.
The Flash memory has an endurance of at least 10,000 write/erase cycles. The ATmega48P/88P/168P/328P Program Counter (PC) is 11/12/13/14 bits wide, thus addressing the 2/4/8/16K program memory locations. The operation of Boot Program section and associ-ated Boot Lock bits for software protection are described in detail in "Self-Programming the Flash, ATmega48P" on page 269 and "Boot Loader Support – Read-While-Write Self-Program-ming, ATmega88P, ATmega168P and ATmega328P" on page 277. "Memory Programming" on page 294 contains a detailed description on Flash Programming in SPI- or Parallel Programming mode.
Constant tables can be allocated within the entire program memory address space (see the LPM – Load Program Memory instruction description).
Timing diagrams for instruction fetch and execution are presented in "Instruction Execution Tim-ing" on page 13.

Program space can also be accessed (read) directly via LPM instructions. This feature enables application-dependent constant lookup tables. *At the same time, the FLASH program space is also mapped into the system data storage space. The user can also use LD/LDD/LDS for accessing the FLASH space. The program space is mapped to the address range directly following the data memory space (0x4000). This is illustrated on the next page.*

Constant tables can be allocated within the entire program memory address space (see the LPM – Load Program Memory instruction description).

Program space can also be accessed (read) directly via LPM instructions. This feature enables application-dependent constant lookup tables. At the same time, the FLASH program space is also mapped into the system data storage space, and the user can also use LD/LDD/LDS to realize access to the FLASH space. The program space is mapped to the address range starting with data memory space 0x4000. As shown below:

程序空间也可以通过 LPM 指令直接访问(读取),这个特点可以实现应用相关的常数查找表。同时 FLASH 程序空间也被映射到系统数据存储空间内,用户也可以使用 LD/LDD/LDS 实现对 FLASH 空间的访问。程序空间被映射到数据存储空间 0x4000 开始的地址范围内。如下图所示: