Memory devices and communication protocols:

SDRAM- DDR PROTOCOL- SDRAM synchronized with the clock speed that the microprocessor is optimised for.

HARDDISK- SATA2 OR SATA3-magnetic storage medium for a computer. It can store terabytes of information.

EEPROM- I2C- it is a user modifiable ROM. It can be erased and reprogrammed repeatedly by applying an electrical voltage that is higher than normal.

FLOPPY DISK-ISA BUS- It is a storage composed of a thin and flexible disk of a magnetic storage medium in a square or nearly square plastic enclosure lined with a fabric that removes dust particles from the spinning disk.

SPI FLASH-SPI- commonly used for storage and data transfer in portable devices.

SD CARD- SD and SPI BUS MODE- SD cards are small thumbnail sized memory storage cards.

EMMC- PCIE- small storage device made up of NAND flash memory and a storage controller.

SSD – SATA or PCIE-It use flash based memory ,which is much faster than a traditional mechanical hard disk.

Laptop devices and communication protocols and its uses:

KEYBOARD (used for typing the letters and numbers): HID PROTOCOL- It is for putting information including letters, words and numbers into your computer.

MONITOR:

HARDDISK (used to store data): SATA2 or SATA 3- magnetic storage medium for a computer.

MOUSE: RS 232C PROTOCOL- mouse is a handheld hardware input device that controls a cursor in a GUI for pointing ,moving and selecting text, icons, files and folders on your computer.

FLEX CAN

Flex CAN controller is a highly configurable , synthesizable core implementing the CAN protocol ,CAN with Flexible Data rate (Can FD) and CAN 2.0 B protocol specifications, built from silicon proven technology.

Features- full implementation of CAN FD and CAN 2.0 B.

Individual Rx mask register per mailbox.

Transmission abort capability

LIN

LIN means local interconnect Network is a serial network protocol used for communication between components in vehicles. It is used for low-speed applications. It is a single wire, serial network protocol that supports communications up to 19.2KbIT/s at a bus length of 40m.

ETHERNET

Ethernet protocol is a typical LAN technology .It transmits data at speed up to 10 Mb/s .It transmits and receives data through cables. This facilitates network communication between 2 or more different types of network cables such as from copper to fiber optic. Ethernet connections are faster, more reliable, and is more secure.

Port driver

It serve as an interface between the computer or peripheral devices. A port generally refers to the part of a computing device available for connection to peripherals such as input and output devices. Ports have many uses to connect a monitor, webcam.

PORT driver module shall complete the overall configuration and initialisation of the port structure which is used in the DIO driver module. Therefore, the DIO driver works on pins and ports which are configured by the PORT driver.

DIO driver

It is a type of i/o drivers. It provide services for read and write to/from. It consists of DIO channels, DIO ports,DIO channel groups. The Dio driver shall define functions to modify the levels of output channels individually, for a port or for a channel group.

The DIO Driver provides services to transfer data to the microcontroller's pins

ADC Driver

ADC drivers are specialty amplifiers that are designed specifically to work alongside ADCs.

It has many functions, like buffering, amplitude scaling, filtering and single ended to differential and differential to single ended conversion.

It provides services to enable and disable a notification mechanism and routines to query the status and result of a conversion.

Pwm driver

It can be used for vary the speed of small electric vehicles.

The driver provides functions for initialization and control of the microcontroller internal PWM stage (pulse width modulation). The PWM module generates pulses with variable pulse width. It allows the selection of the duty cycle and the signal period time.

CAN driver

Can driver provides services for initiating transmissions and calls the callback functions of the can interface for notifying events ,independently from the hardware. It provide services to control the behaviour and state of the can controllers that are belonging to the same can hardware unit.

It provides a simple application program interface for sending and receiving can messages.