- The components are described as follows

PIC32

PIC32MX340 is used as the central processor. It is a 32-bit, low power RISC processor with the enhanced MIPS32® Release 2 Instruction Set Architecture. Several internal modules from the PIC are used to interface to the external components in the adherent device.

o   A2D (ADC)

The microcontroller has an internal 10 bit analog to digital converter which receives analog ECG signal, the temperature output and ½ battery voltage.

o   UART

UART2 is used as a communication link by the bluetooth module

o   SPI

Serial Peripheral Interface (SPI) bus is used to handle the link between flash, external ADC and accelerometer. It operates at 1 MHz

- *External ADC*

A 12-bit external ADC is interfaced to the PIC32 chip using the SPI bus. It's input is analog BIOC signal.

- *Flash*

The on-board flash can store 4 MBytes of data

- *Bluetooth*

Serial transmission between the adherent device and the gateway is carried out over a Bluetooth link. LMX 9830 Bluetooth Serial Port module is the RF transceiver used for this communication.

- *ECG and BioConductance*

The electrical signal received is amplified by an Instrumentation amplifier. The amplified signal is passed through both a high pass (HPF) and a low pass filter (LPF). The HPF output gives the BioConductance signal which is digitized by the external ADC, while LPF gives the ECG signal which is given to the internal ADC.

- *XL*

The accelerometer is used to detect change in physical position.