Bluetooth® wireless technology is becoming a popular standard in the communication arena, and it is one of the fastest growing fields in the wireless technologies. It is convenient, easy to use and has the bandwidth to meet most of today’s demands for mobile and personal communications. Bluetooth technology handles the wireless part of the communication channel; it transmits and receives data wirelessly between these devices. It delivers the received data and receives the data to be transmitted to and from a host system through a host controller interface (HCI). The most popular host controller interface today is either a UART or a USB. Here, I will only focus on the UART interface, it can be easily show how a Bluetooth module can be integrated on to a host system through a UART connection and provide the designer an optimal solution for Bluetooth enabled systems.

Here, I will show two examples of hardware interface between Bluetooth wireless technology and UART. One example shows an interface between a Bluetooth module and a PC via UART, and the other example shows an interface between a Bluetooth module and a Microcontroller via UART.

I have a used WT32 Bluetooth module.
Supply voltage at VCC pin can vary between 1.8 V and 3.3 V. VCC and BTEN combined to a single 3.3 V supply voltage.

**INTERFACE BETWEEN AN BLUETOOTH MODULE AND A PC VIA UART**

Now connect the PC with Bluetooth module through RS232 over MAX232 or MAX233 level converter.

Now, test the connection with hyperterminal or any serial port communication software. Here, I have used hyperterminal for test.
HYPERTERMINAL SETTINGS

- 9600 baud
- no parity
- 8 databits
- no flowcontrol
- 1 stopbit

You can change these settings via hyperterminal with WT32 Bluetooth module command. See more in user guide.

INTERFACE BETWEEN AN BLUETOOTH MODULE AND A MICROCONTROLLER VIA UART

Connect the Bluetooth module with microcontroller. Here, I have used PIC16F887 microcontroller.

Now, test the communication between PC and Microcontroller Device. You can use the following code that is written in C using mikroC PRO for PIC.

SOURCE CODE

```c
char uart_rd;

void main() {
    ANSEL = 0;                      // Configure AN pins as digital
    ANSELH = 0;
    UART1_Init(9600);              // Initialize UART module at 9600 bps
    Delay_ms(100);                 // Wait for UART module to stabilize
    while (1) {                     // Endless loop
        uart_rd = 0;                 // Example read from UART
    }
}
```
UART1_Write_Text("TEST");
Delay_ms(2000);        // Wait
}
}

OUTPUT

Now, you can see the Data “TEST” on Hyperterminal that will send by microcontroller via Bluetooth Module.