
Wireless Data Communication Using PSoC

Overview

Now a day's wireless communication plays an important role in communication world. A simple wireless data communication is implemented between systems using Programmable System on Chip (PSoC). PSoC is a mixed signal array that integrates microcontroller (μ C) and surrounding analog & digital peripheral functions that normally exist in embedded designs.

Features

- Range of up to 50 meters or more
- Data throughput of up to 62.5 kbps.
- SPI microcontroller interface (up to 2 MHz data rate)
- Operating voltage of 3.3V
- Up to 0dBm output power

Tools specification

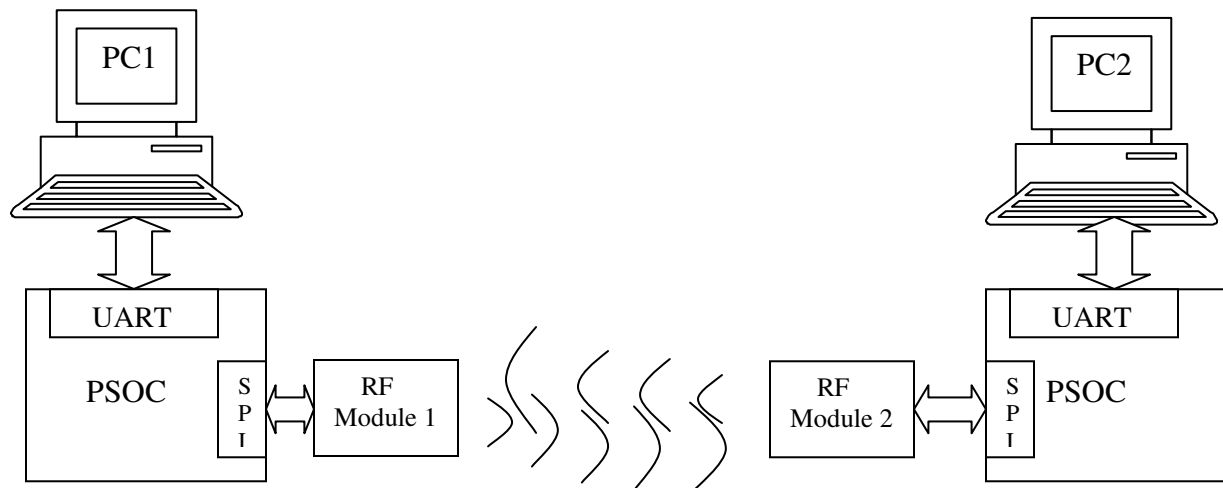
Hardware tools:

- PSoC Eval boards
- RF modules (CYWM6935)
- RS232 cables

Software tools:

- Windows 98 and above
- PSoC Designer 4.3 and Programmer

Block Diagram



PSoC=Programmable System on Chip.
UART=Universal Asynchronous Receiver Transmitter.

RF=Radio Frequency Module.
SPI=Serial Peripheral Interface.

Block diagram description:

The block diagram of the work is as shown above. In the above proposed project two way data communication is established. The data is sent from PC1 to PSoC through UART and in turn to RF module1 Via SPI interface to the other RF module2. The data received in RF module2 is send to PSoC through SPI and it is send to PC2 using UART and the same is true vice versa.



External hardware:

Because the PSoC communication differential runs at 0 to 5V, and the RS232 (connects PC and PSoC UART) runs at -12 to +12V you must bump up the communication differential by using a transceiver chip like a Maxim MAX232 (Level converter).

Configuring the hardware of the PSoC:

The PSoC conveniently has a UART user module. Place the user module in the device editor. You must route the output of the TX and Rx portion to a pin. Now you must set up the clock for the UART. A possible baud rate is up to 115200 baud (the fastest allowable for most PC's). Now you have set up the PSoC hardware configuration for the UART.

For More Details: WWW.CYPRESS.COM



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