Lab Requirement
IrDA and ExINT

Design a LPC1769 microprocessor system with TSOP1236 to detect the color TV remote control signal. The detailed requirements are:

1. Design a LPC1769 CPU interface to TSOP1236 (or equivalent device) sensor to support ExINT function. You can use either GPP (P0 or P2) to realize ExINT function.

2. Test your TSOP1236 sensor by using oscilloscope to verify the detection of the remote controller Tx signal, and capture the signal waveform on the oscilloscope display screen.

3. Once the test in 2 is successful, then write a ExINT subroutine to realize ISR (Interrup service routine) function. Your ISR should have the following features:

(3.1) To be able to use ExINT to capture the GPP port trigger function which is coming from the TSOP1236 output;

(3.2) Once the ExINT is generated by the detection of the GPP port interrupt, use your SPI color LCD display to display a red color square.

(3.3) Once the 2nd GPP ExINT is detected, then your ISR will display a green square. This display pattern is alternating as long as the ExINT experiment continues with the detection of each incoming remote controller event (for about 4 to 5 times). In addition to your color display, you will also need to display the message on console to indicate each ExINT event is captured and processed.

4. Write a formal lab report with the report rubrics posted before, and print and bring the cover page of the lab report when ready for lab demo. This report will consists of SPI color LCD Interface design material as well.

(End)