

Bluetooth 교육용 Kit

Model : FB800ED

블루투스 전문기업이 만든 최고의 교육용제품 !



- 쉽고 , 재미있게 배우는 Bluetooth 통신
- 어려웠던 무선통신 이젠 내 마음대로...!!
- 대학교재 ,연구소의 실습장비로 최적화된 제품
- 구성은 알차게 High 제품가격은 부담없게 Low

소프트웨어 개발소스

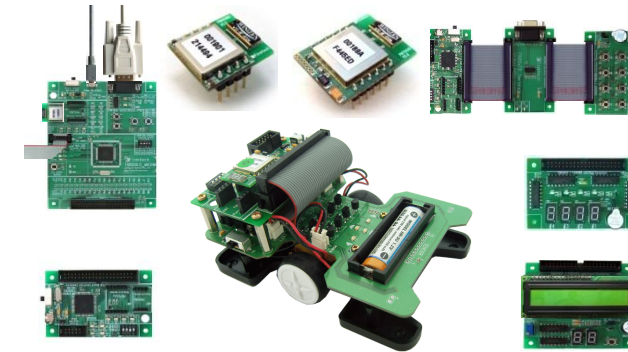
```

(2) Main Process : INIT_FLAG ( )

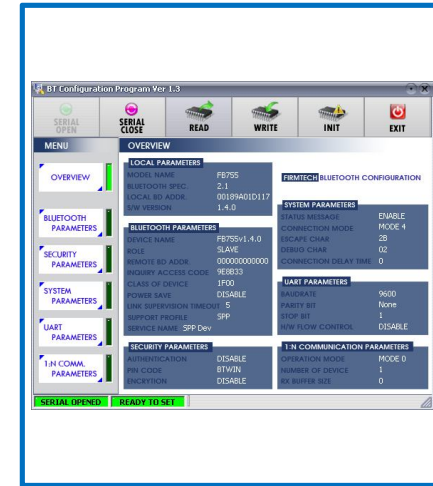
void INIT_FLAG()
{
    dip_switch_value = 0;
    mode_value = MODE_OPERATION;
    //
    cr0_check_flag = 0;
    if_check_flag = 0;
    //
    step_count = MAIN_STEP_1;
    old_step_count = MAIN_STEP_0;
    //
    roll_value = ROLL_SLAVE;
    //
    connect_value = CONNECT_STANDBY;
}

(3) Main Process : DISPLAY_ERROR ( )

void DISPLAY_ERROR()
{
    DISPSTR_UART1((unsigned char *)"[ERROR,STEP:");
    PUTCHAR_UART1(HEX2CHAR(step_count));
    DISPSTR_UART1((unsigned char *)"\n\n");
    //
    step_count = MAIN_STEP_30;
}
    
```



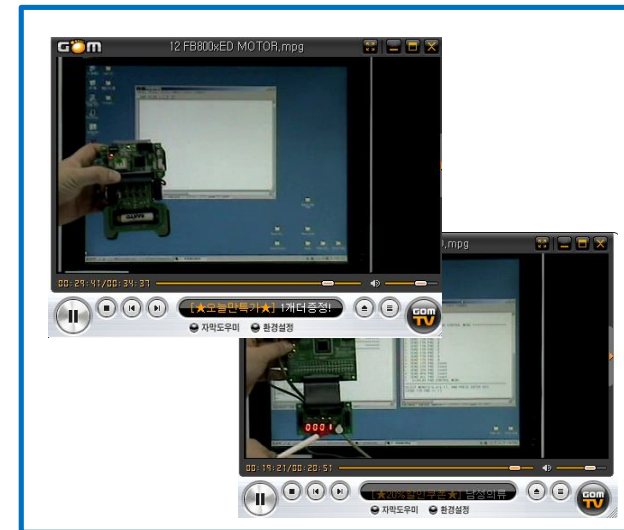
Utility (GUI 설정 프로그램, 컴파일러, 프로그램 다운로더)



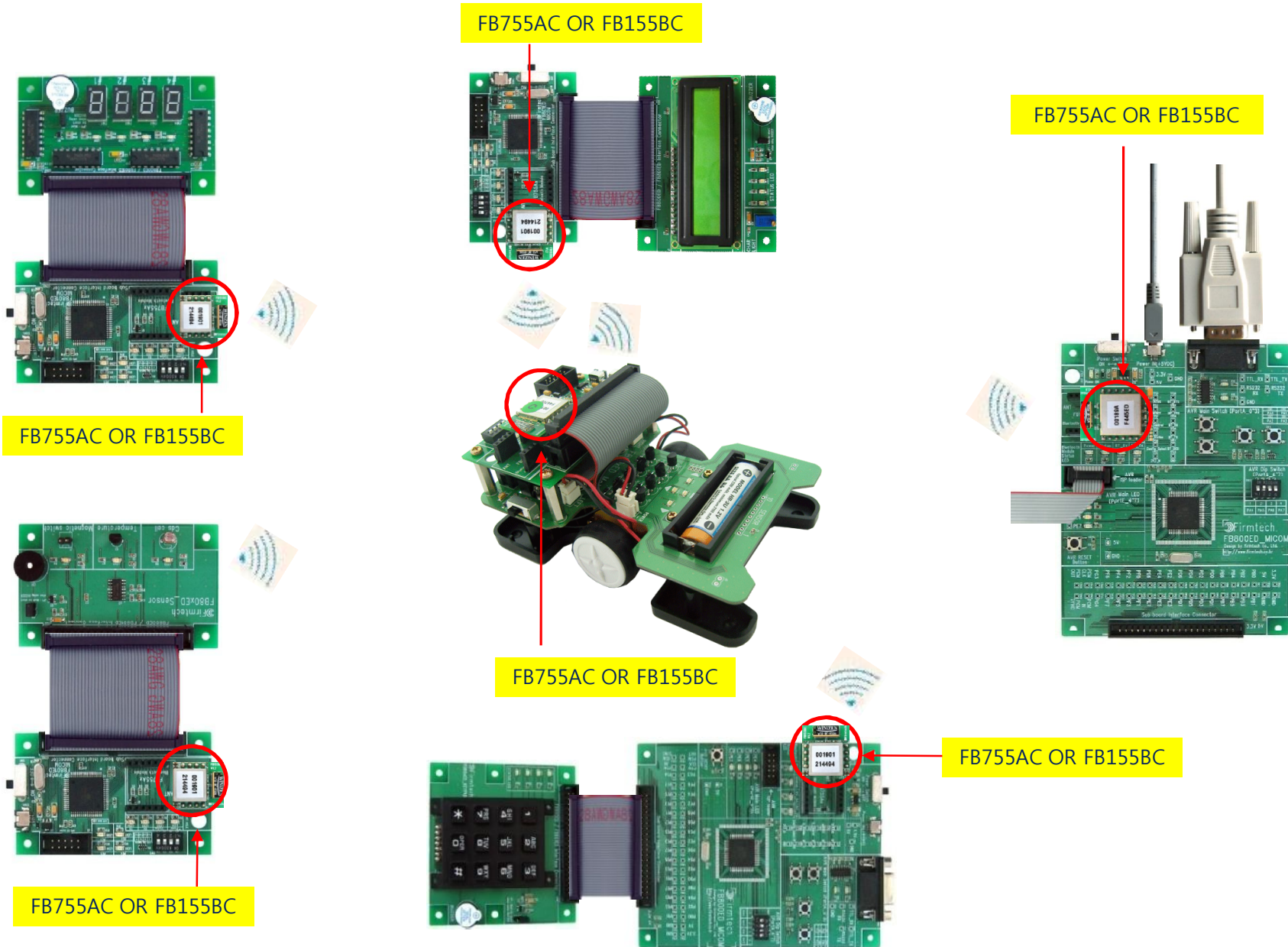
사용자 메뉴얼



제품 사용관련 동영상강좌



사용자 마음대로 ! 자유로운 Bluetooth Network 구성이 가능합니다



1. 하드웨어 구성



FB155BC



FB755AC



FB800xED_FND



FB800xED_FND



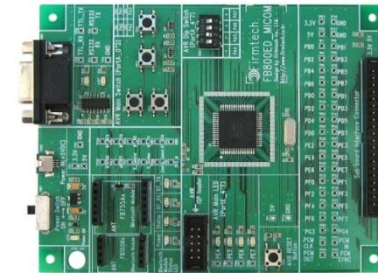
FB801ED_MICOM



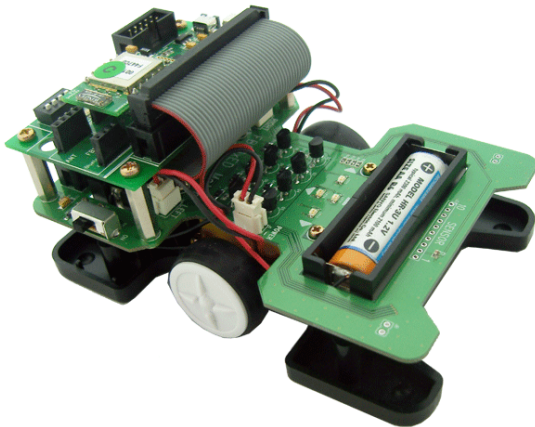
FB800xED_FND



FB800ED_Serial



FB800ED_MICOM



FB800xED_MOTOR



FB800xED_MONITORING



FB800xED_LCD



FB800xED_RELAY



FB800xED_KEYPAD

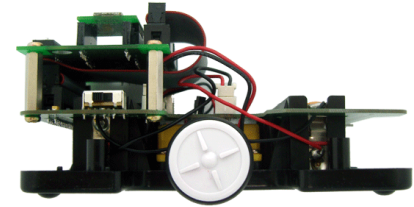
*** 다양한 구성의 하드웨어 확장구성 예**



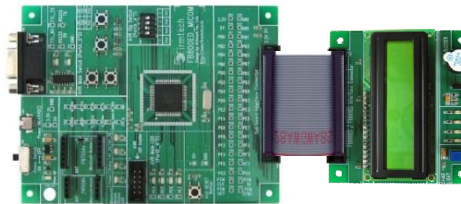
FB800xED_FND 확장구성 예



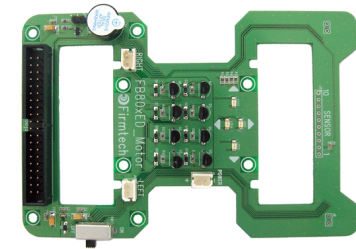
FB800xED_LCD 확장구성 예



FB800xED_FND 확장구성 예



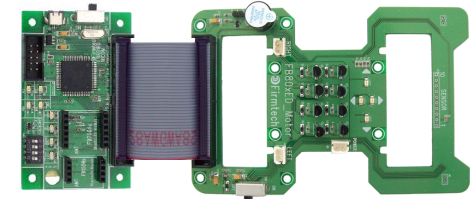
FB800xED_LCD 확장구성 예



FB800xED_FND 확장구성 예



FB800xED_LCD 확장구성 예



FB800xED_MOTOR 확장구성 예

2. 소프트웨어 구성

- Atmega 128 기반 다양한 실습이 가능한 주석문이 포함된 Full source file (c언어)제공
- Atmega 128 기반 각각의 하드웨어 별 구동 소프트웨어 Full source file (c언어)제공

Main Process : MAIN_LED_PROCESS()

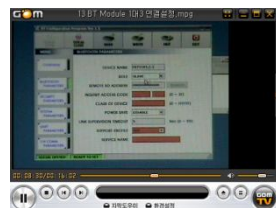
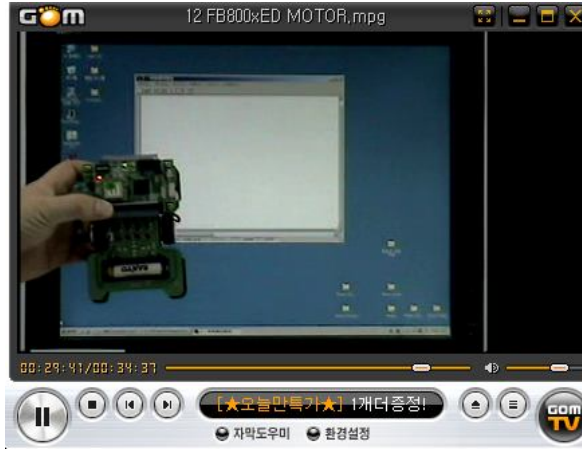
```
void MAIN_LED_PROCESS()
{
    //동작 모드인 경우, LED를 상황에 맞게 ON/OFF 시킨다.
    if(mode_value == MODE_OPERATION)
    {
        //AVR의 상태를 나타낸다.
        if(timer0_counter < 100)
        {
            WRITE_PORT(WRITE_LED_1_ON);
            WRITE_PORT(WRITE_LED_2_OFF);
        }
        else
        {
            WRITE_PORT(WRITE_LED_1_OFF);
            WRITE_PORT(WRITE_LED_2_ON);
        }
        //
        //BT 모듈의 연결 상태를 나타낸다.
        dcd_value = READ_PORT(READ_DCD);
        dcd_value = (dcd_value >> 5) & 0x01;
        //BT 연결된 경우, FB755AX DCD 포트 Low 유지(FB155BX는 DCD 포트 없음)
        if((dcd_value == 0x00) || (connect_value == CONNECT_OK))
        {
            WRITE_PORT(WRITE_LED_4_ON);
        }
        //BT 연결이 안된 경우, FB755AX DCD 포트 High 유지(FB155BX는 DCD 포트 없음)
        else
        {
            WRITE_PORT(WRITE_LED_4_OFF);
        }
    }
}
} ? end if mode_value==MODE_OPER... ?
```

< Main LED 처리 함수 >

1. FB800ED_MICOM 보드의 동작 모드 (mode_value)가 동작(MODE_OPERATION)인 경우, Main LED 1/2를 일정한 간격으로 번갈아 ON/OFF 시킨다.
2. BT Module의 DCD 포트 값을 읽는다.
3. BT Module의 DCD 포트 값이 0x00이거나 BT Module 연결 상태(connect_value)가 CONNECT_OK인 경우, Main LED 4를 ON 시킨다.
4. BT Module의 DCD 포트 값이 0x00이 아니거나 BT Module 연결 상태(connect_value)가 CONNECT_STANDBY인 경우, Main LED 4를 OFF 시킨다.

3. 동영상 강좌 구성

- 동영상 강좌를 통하여 제품사용법 및 특징과 응용방법 을 손쉽게 익힐 수 있습니다



동영상 강좌 리스트 (총 19편)

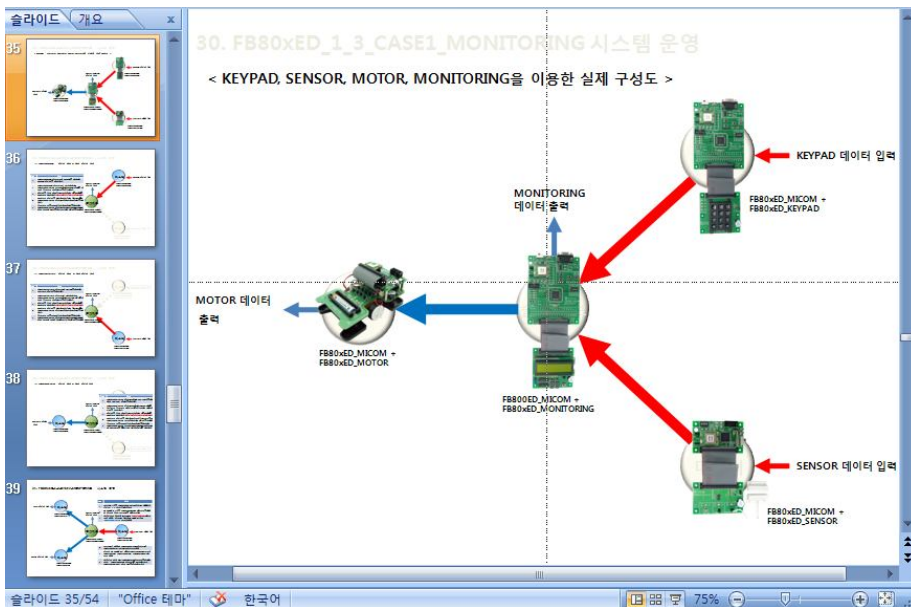
- 1 FB755AX 특징
- 2 FB1558X 특징
- 3 BT Module 1대1연결
- 4 FB800ED MICOM (1)
- 4 FB800ED MICOM (2)
- 5 FB801ED MICOM
- 6 FB800xED FND
- 7 FB800xED LCD
- 8 FB800xED KEYPAD
- 9 FB800xED SWITCH
- 10 FB800xED SENSOR
- 11 FB800xED RELAY
- 12 FB800xED MOTOR
- 13 BT Module 1대3 연결설정
- 14 FB800xED Monitoring
- 15 FB800xED Monitoring 1대3 연결예제 1
- 16 FB800xED Monitoring 1대3 연결예제 2
- 17 BT Module 1대7 연결설정
- 18 FB800xED Monitoring 1대7연결 (1)
- 18 FB800xED Monitoring 1대7연결 (2)
- 19 FB800xED Monitoring 1대7 프로그램운영

4. 사용자 메뉴얼 구성 (그림위주의 부담 없는 형식)



사용자 매뉴얼 리스트 (총 19편)

- 00_FB800ED_저작권 관련 사항
- 01_FB800ED_시작하기 전에
- 02_about Bluetooth
- 03_about FB755AS_FB755AC
- 04_about FB155BS_FB155BC
- 05_about ATmega128
- 06_FB800ED_Tools Guide
- 07_FB800ED_Hardware_System Guide
- 08_FB800ED_MICOM
- 09_FB80xED_FND
- 10_FB80xED_LCD
- 11_FB80xED_KEYPAD
- 12_FB80xED_SWITCH
- 13_FB80xED_SENSOR
- 14_FB80xED_RELAY
- 15_FB80xED_MOTOR
- 16_FB755AX_1_N_CONNECT
- 17_FB80xED_1_3_CASE1_MONITORING
- 18_FB80xED_1_3_CASE2_MONITORING
- 19_FB80xED_1_7_MONITORING

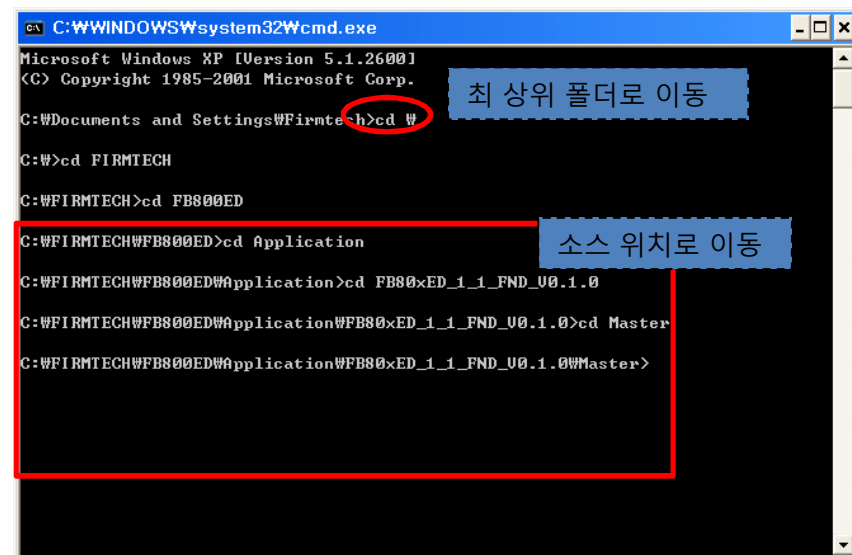
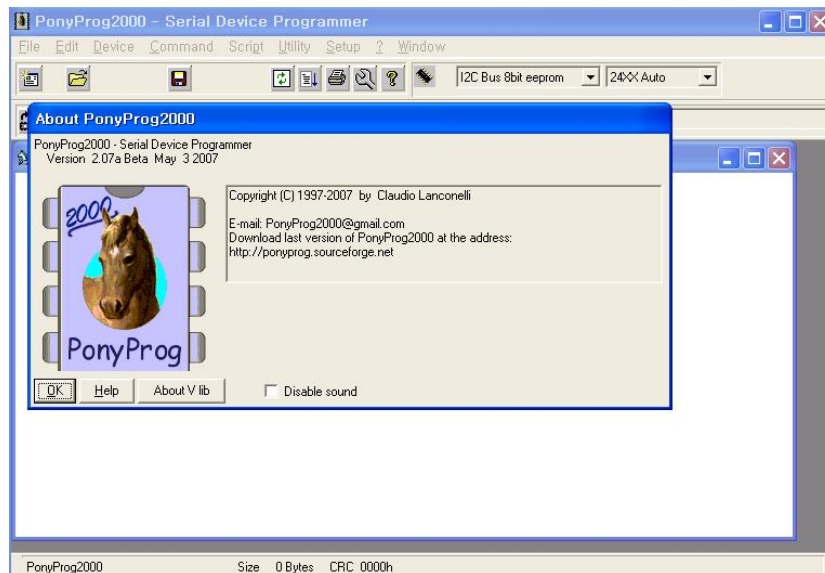


5. Utility 구성 (제품설정을 Window GUI ,컴파일러, 프로그램 Downloader 등)



현재 상태를 한눈에 볼 수 있는 화면

블루투스 임베디드 모듈 마스터 설정 시 사용하기 위해 Local BD Address 를 반드시 기억한다



FB800ED Selection Guide



피코넷 지원구분	FB800ED		
	Pro	Lite A	Lite B
1 : 3 통신 지원	√	√	√
1 : 7 통신 지원	√		

구성품	FB800ED		
	Pro	Lite A	Lite B
FB755AC	2 EA	1 EA	1 EA
FB155BC	6 EA	3 EA	3 EA
FB800ED_MICOM	2 EA	2 EA	2 EA
FB801ED_MICOM	6 EA	2 EA	2 EA
FB800xED_FND	1 EA		1 EA
FB800xED_LCD	1 EA		
FB800xED_KEYPAD	1 EA	1 EA	
FB800xED_SWITCH	2 EA		1 EA
FB800xED_SENSOR	1 EA	1 EA	
FB800xED_RELAY	1 EA		1 EA
FB800xED_MOTOR	1 EA	1 EA	
FB800xED_MONITORING	1 EA	1 EA	1 EA
FB800ED_SERIAL	2 EA		
AVR Loader	1 EA	1 EA	1 EA
USB cable	8 EA	4 EA	4 EA
RS232 연장케이블	2 EA	2 EA	2 EA
Flat cable	8 EA	4 EA	4 EA
5V Adaptor	2 EA	2 EA	2 EA
FB800ED_DIY	1 EA	1 EA	1 EA
통합 CD (각종데이터)	1 EA	1 EA	1 EA

Bluetooth 교육용 Kit

FB800ED Pro

< 1:7 통신 가능 >



구성품사진	규격	갯수	구성품사진	규격	갯수
	FB755AC	2		FB800xED_MOTOR	1
	FB155BC	6		FB800xED_MONITORING	1
	FB800ED_MICOM	2		FB800ED_SERIAL	1
	FB801ED_MICOM	6		AVR Loader	4
	FB800xED_FND	1		USB cable	8
	FB800xED_LCD	1		RS232 연장케이블	1
	FB800xED_KEYPAD	1		Flat cable	8
	FB800xED_SWITCH	2		5V Adaptor	2

구성품사진	규격	갯수	구성품사진	규격	갯수
	FB800xED_SENSOR	1		FB800ED_DIY	1
	FB800xED_RELAY	1		CD	1

Bluetooth 교육용 Kit

FB800ED Lite A

< 1:3 통신 가능 >



구성품사진	규격	갯수	구성품사진	규격	갯수
	FB755AC	1		AVR Loader	1
	FB155BC	3		USB cable	8
	FB800ED_MICOM	2		RS232 연장케이블	1
	FB801ED_MICOM	2		Flat cable	8
	FB800xED_KEYPAD	1		5V Adaptor	2
	FB800xED_SENSOR	1		FB800ED_DIY	1
	FB800xED_MOTOR	1		CD	1
	FB800xED_MONITORING	1			

Bluetooth 교육용 Kit

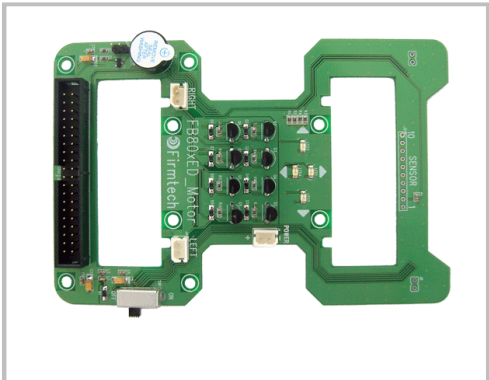
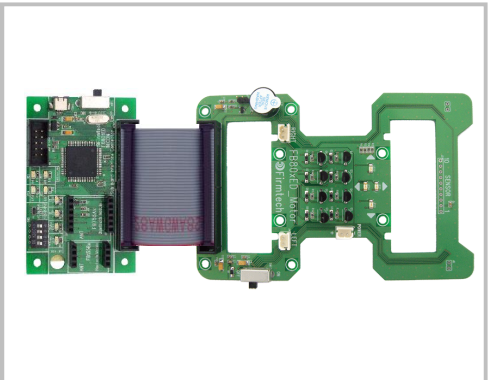
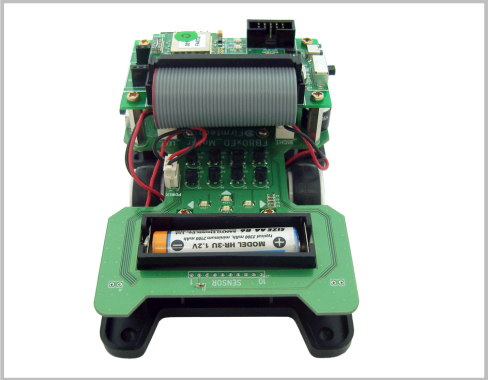
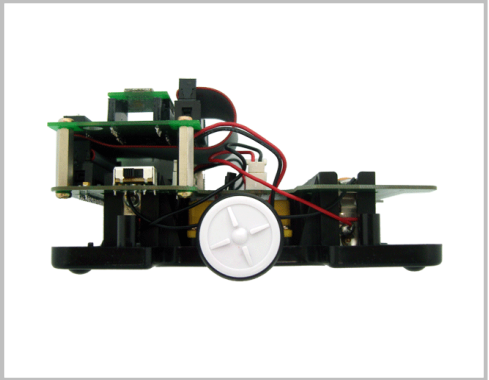
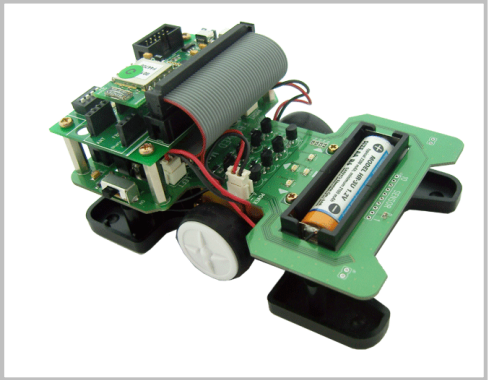
FB800ED Lite B

< 1:3 통신 가능 >

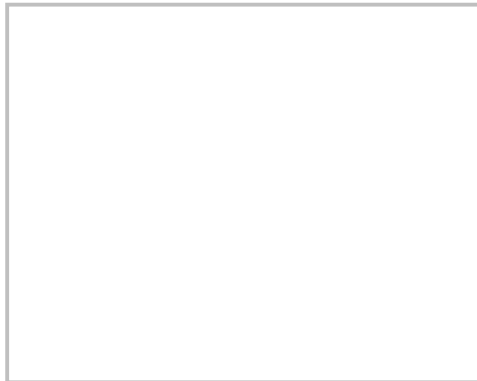
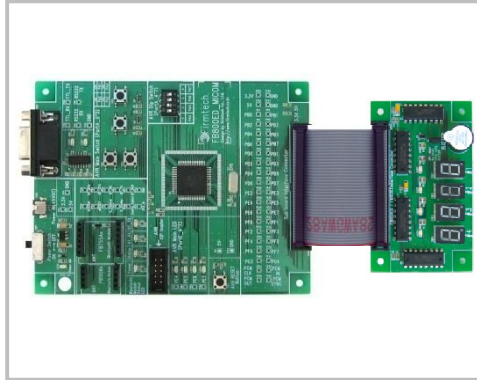
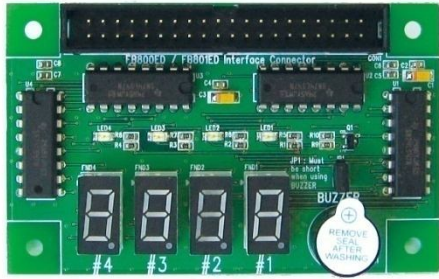


구성품사진	규격	갯수	구성품사진	규격	갯수
	FB755AC	1		AVR Loader	1
	FB155BC	3		USB cable	8
	FB800ED_MICOM	2		RS232 연장케이블	1
	FB801ED_MICOM	2		Flat cable	8
	FB800xED_FND	1		5V Adaptor	2
	FB800xED_RELAY	1		FB800ED_DIY	1
	FB800xED_SWITCH	1		CD	1
	FB800xED_MONITORING	1			

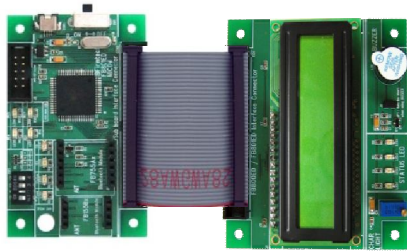
FB800xED_ MOTOR



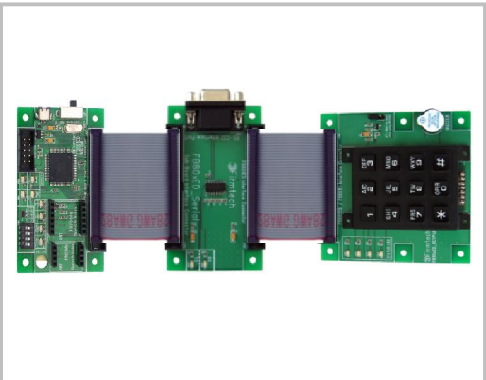
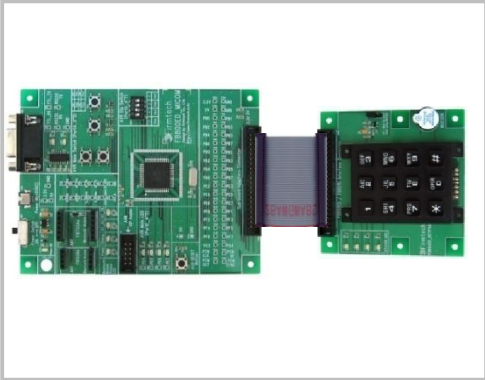
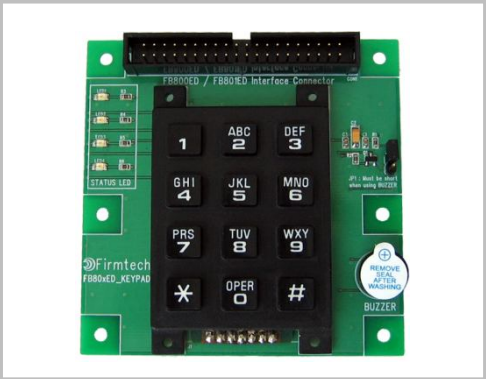
FB800xED_ FND



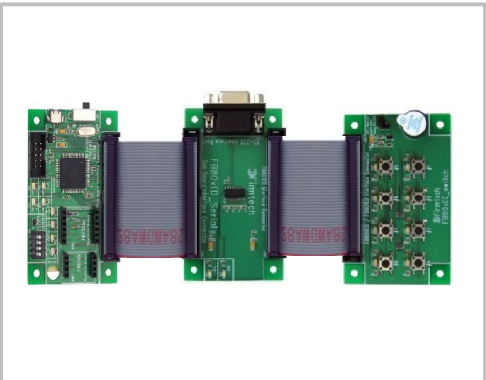
FB800xED_ LCD



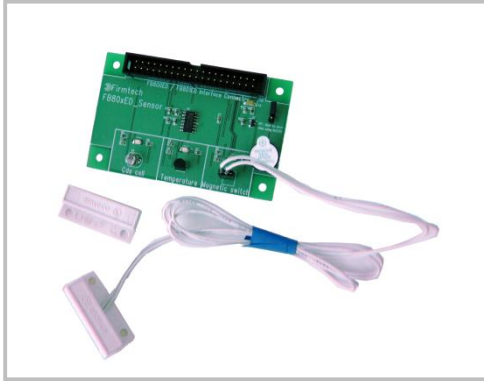
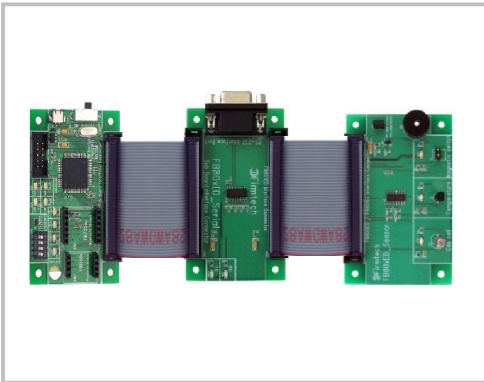
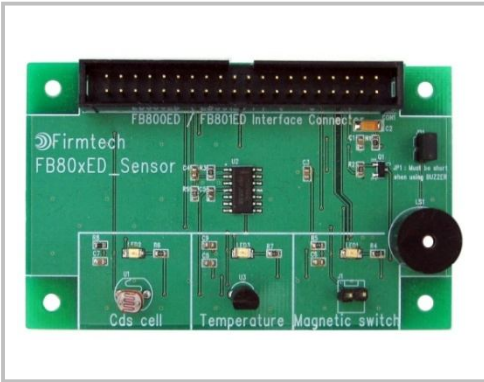
FB800xED_ KEYPAD



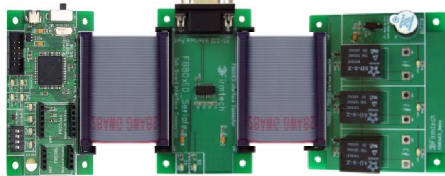
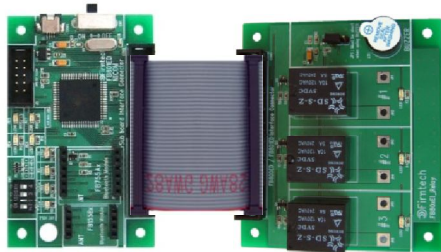
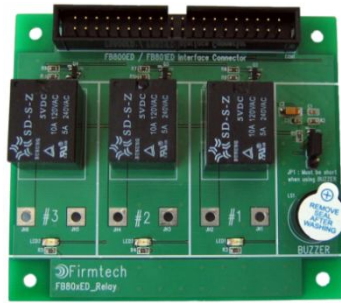
FB800xED_SWITCH



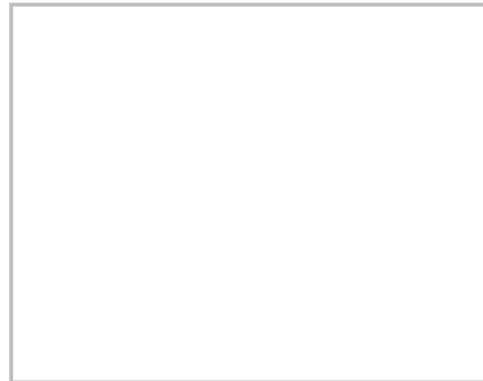
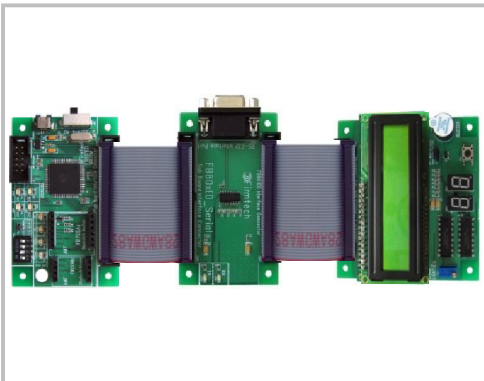
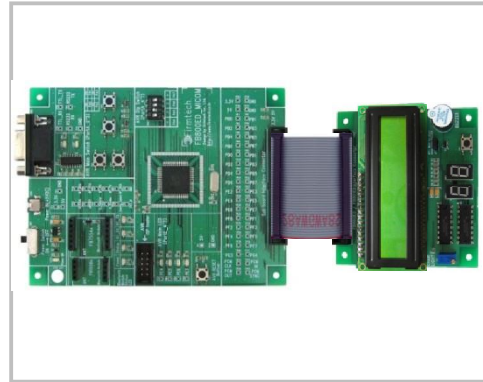
FB800xED_ SENSOR



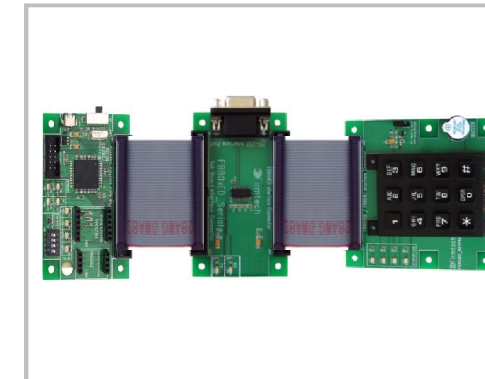
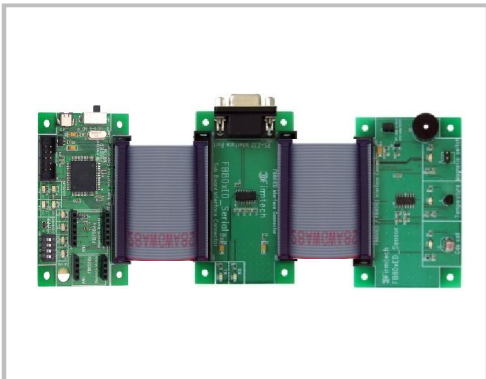
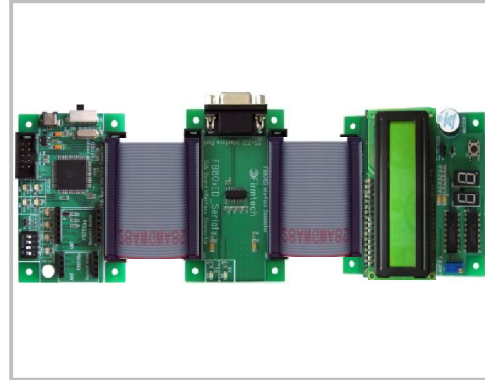
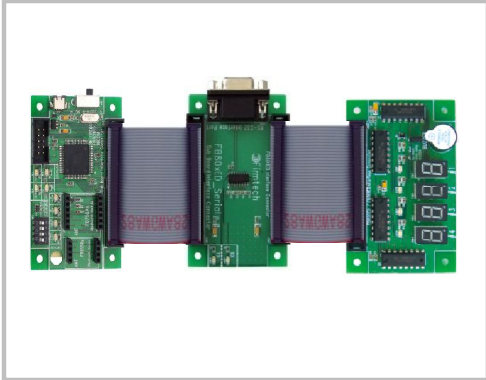
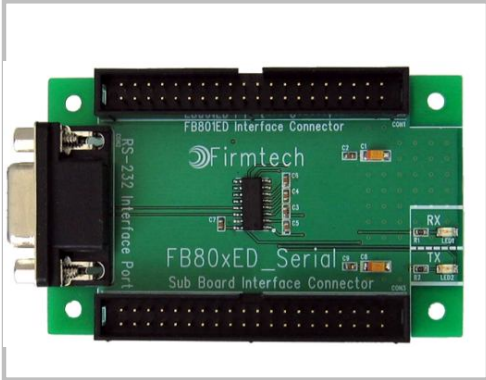
FB800xED_RELAY



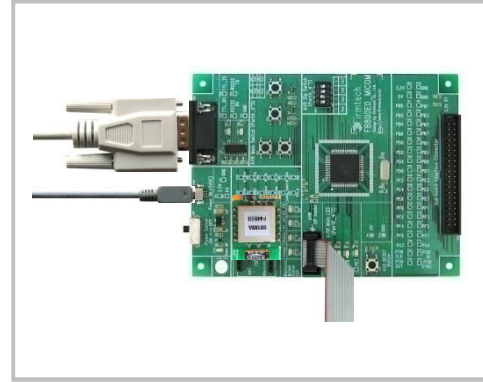
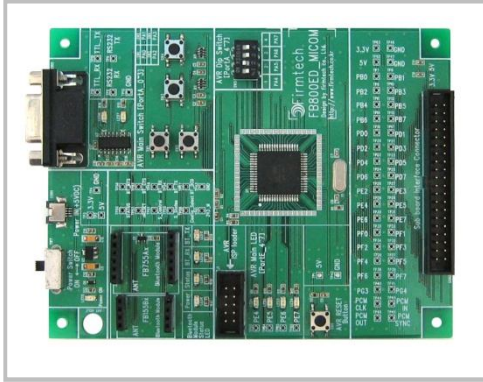
FB800xED_ MONITORING



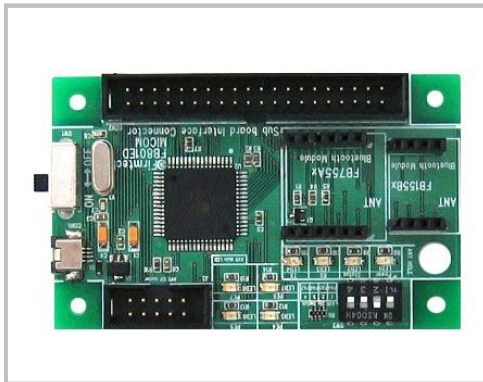
FB800xED_SERIAL



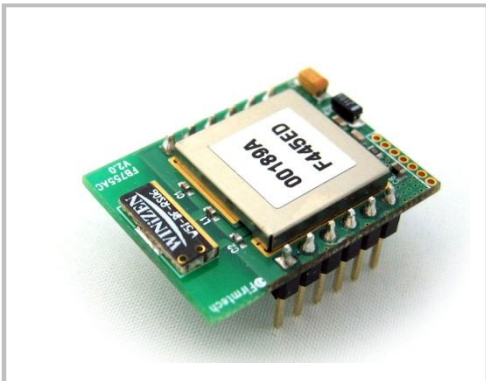
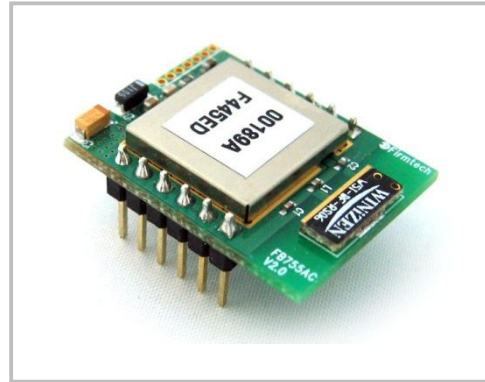
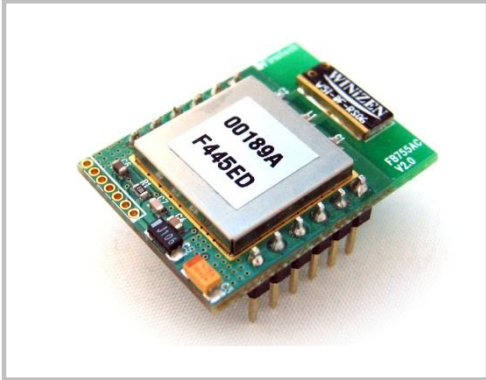
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