

- **날** 짜 : 2014년 1월 16일
- 제 목 : Microchip Code Configurator 예제
- 문서번호 : KR_ES_0189
- **작 성 자** : 하삼식 (<u>Vincent.ha@microchip.com</u>, FAE)

< Engineering Issue 내용 >

- 1. 관련 Devices :
- PIC12(L)F1501 PIC16(L)F1787
- PIC12(L)F1822 PIC16(L)F1788
- PIC12(L)F1840 PIC16(L)F1789
- PIC16(L)F1503 PIC16(L)F1823
- PIC16(L)F1507 PIC16(L)F1824
- PIC16(L)F1508 PIC16(L)F1825
- PIC16(L)F1509 PIC16(L)F1826
- PIC16(L)F1512 PIC16(L)F1827
- PIC16(L)F1513 PIC16(L)F1828
- PIC16(L)F1516 PIC16(L)F1829
- PIC16(L)F1517 PIC16(L)F1847
- PIC16(L)F1518 PIC16(L)F1933
- PIC16(L)F1519 PIC16(L)F1934
- PIC16(L)F1526 PIC16(L)F1936
- PIC16(L)F1527 PIC16(L)F1937
- PIC16(L)F1782 PIC16(L)F1938
- PIC16(L)F1783 PIC16(L)F1939
- PIC16(L)F1784 PIC16(L)F1946
- PIC16(L)F1786 PIC16(L)F1947

2. 내용

- MC2(Microchip Code Configurator)를 이용해 UART로 ADC를 값을 출력하는 예제
- 3. 준비 사항
 - PICDEM PIC18 Board
 - PIC18F1947 PIM
 - USB to Serial Cable



- 4. 사용방법
 - 1) PIC16LF1947을 선택하고 Project를 만든다.



2) MC2를 실행합니다.

lt Embedded	1	Graphics Display Designer X	:0v0 : back 0
Services te Licenses Apply Diff 4 Add to Fave MPLAB Har Templates DTDs and X Plugins Plugins	Patch orites mony Configurator (ML Schemas	MPLAB® Code Configurator CreateGDD CreateGDD none Creates GPL widget HAB KoreanStr1[];	s used in screen - G
Options 18 18 18 18 18	voro createrin SetLineType(SetLineThick SetColor(RGB	mitivesForGDD(void) (0); kness(0); BConvert(0, 0, 0));	

3) Clock을 먼저 설정한다.

Α.

Projects Files C	lasses Servi	es	40	: test3	- N	1PLAB® Code Configurator 🔹 🕾 GDD_Resource, h 🔹 😤
Project Resources						
🕒 System						Generate Code (2)
System System Search for modules, Device Resources - PIC16L ADC ADC CCP CCP Comparator DAC					Citetere	Generate Code (2)
ECCP EUSART FVR GPIO						
⊎~~ MSSP ⊕~ C Memory						



- B. Internal Clock 16Mhz
- 4) Project Resources에 ADC와 UART를 추가한다.



5) ADC를 설정

Α.

- A. Enable ADC 체크
- B. 오른쪽 정렬로 선택
- C. RA0를 AD포트로 선택한다.

(Generate Code (4)	<< Resou	rces Pi	n Manager >>		RE1 1 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48	RB0_
DC::ADC	Enable ADI	X Clo	ck: FOSC/16	5 🗸 Samplin	a Fre	RED 2 47 R60 3 46 R61 4 46	RB1 E RB2 RB3
đ	Positive Vref: LL_VDD Negative Vref: chip_VSS	▼ Res	sult Alignment	:: 🔿 Lei 💿 <u>F</u>	light	R63 6 43 MCLR 7 42 R64 8 41	RB5 RB6 VSS T
	Enable ADC Interrupt 📃	Selected ch	annels Pin No,	Channel	C	▲▼ Package QFN64 ▼ Reverse Pin Order ○ Vertical ● Ho C 24 22 21 22 23 24	rizontal
		RAO	24	ANO	0	Image: Point of the state Point of the state <th< td=""><td>+0 F 2</td></th<>	+0 F 2
						EUSARTI CK1/TX EUSARTI DT1/RXI	
D	•	m			F	× m	r F



- 6) UART설정
 - A. Enable USART 체크
 - B. Enable Transmit 체크
 - C. Boadrate 입력(9600bps)

	Generate Code	(i) << Resources Pin Manager >>						
RZ)	🎲 InitializerDefault 👻 🕂 🗙							
V)sna	Enable USA(T 🔽	Baudrate: 9600 - Error: -0,07993571						
Iron	Enable Transmit 📝	Transmission: 💿 8 bit 💿 9 bit						
ynch	Enable Continous Receive 🕅	Reception: 💿 8 bit 💿 9 bit						
T As	Auto-Baud Detection 🕅	Clock Polarity: 💿 Non-Inverted 💿 Inverted						
ISAR ⁻	Enable Address Detect 🕅	Enable Wake-up 🕅						
1::EL	Enable USART Interrupts 🔲	Redirect STDIO to USART						
SARI	Enable Transmit Interrupt 🗌	Transmit Buffer Size: 8 🚽 Bytes						
B	Enable Receive Interrupt 🗌	Receive Buffer Size: 8 👻 Bytes						

7) main.c파일에 Code추가

D.

- A. #include <stdio.h>를 추가
- B. 아래 코드를 추가한다.(printf문을 이용하여 string출력을 위해)

```
adc_result_t res;

void putch(char c) {

EUSART1_PutByte(c);

i. }

C. UART로 데이터를 보내는 코드를 추가한다

while (1)

{

res = ADC_GetConversion(channel_ANO);

printf("The pot value is : %x ♥r♥n", res);

}

i.
```

D. 최종 코드 추가된 main.c





8) 결과화면

i.

🧶 СОМ28:	9600baud - Ter	a Term VT		
<u>F</u> ile <u>E</u> dit	Setup Contro	ol <u>W</u> indow	<u>H</u> elp	
The pot value	is: 104			*
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Α.