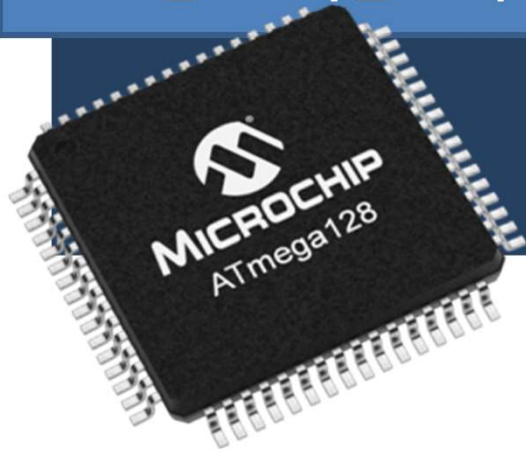


2023년 IoT기반 스마트 솔루션 개발자 양성과정



Embedded Application

3-mCube-MCU Kit

담당 교수 : 윤 종 이

010-9577-1696

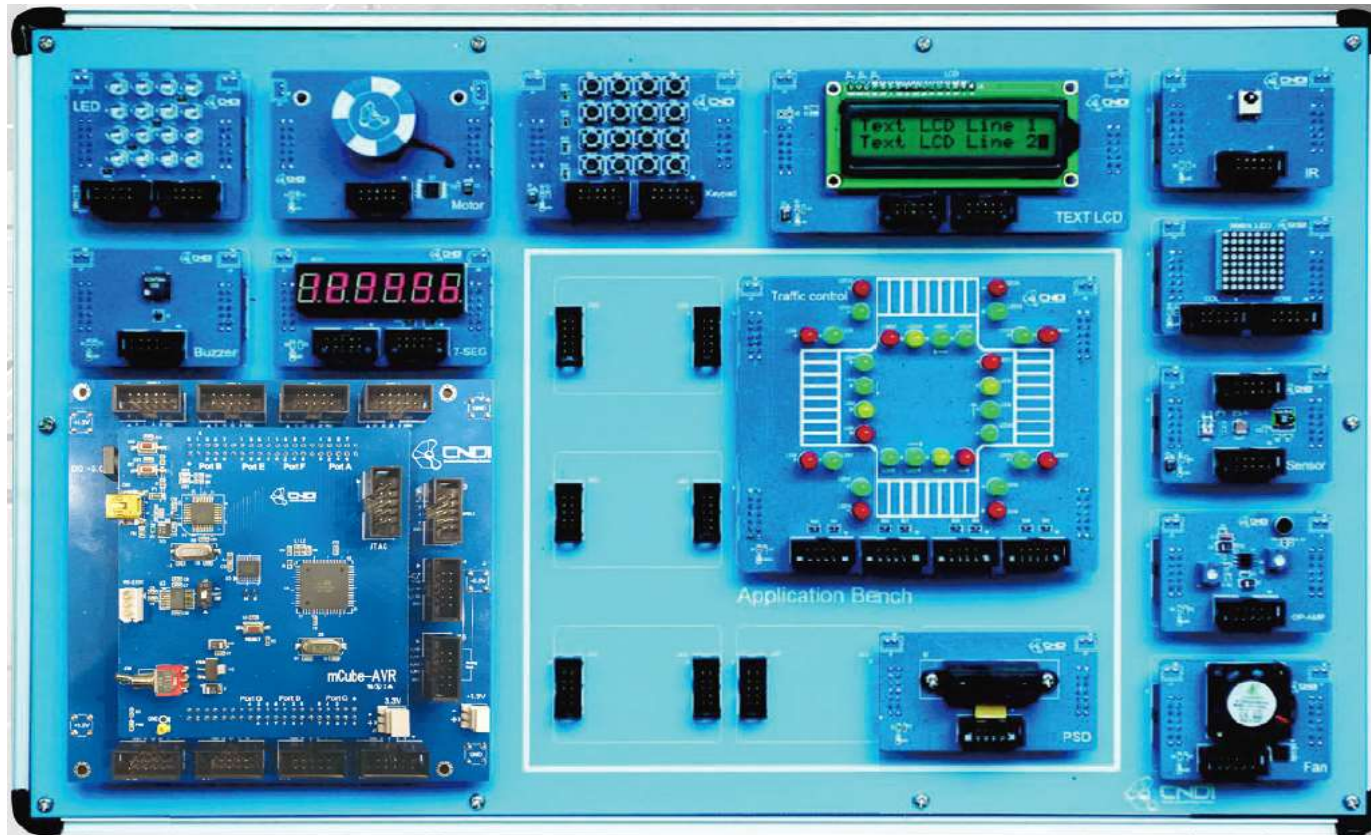
ojo1696@naver.com

<https://cafe.naver.com/yoons2023>



충북대학교 공동훈련센터

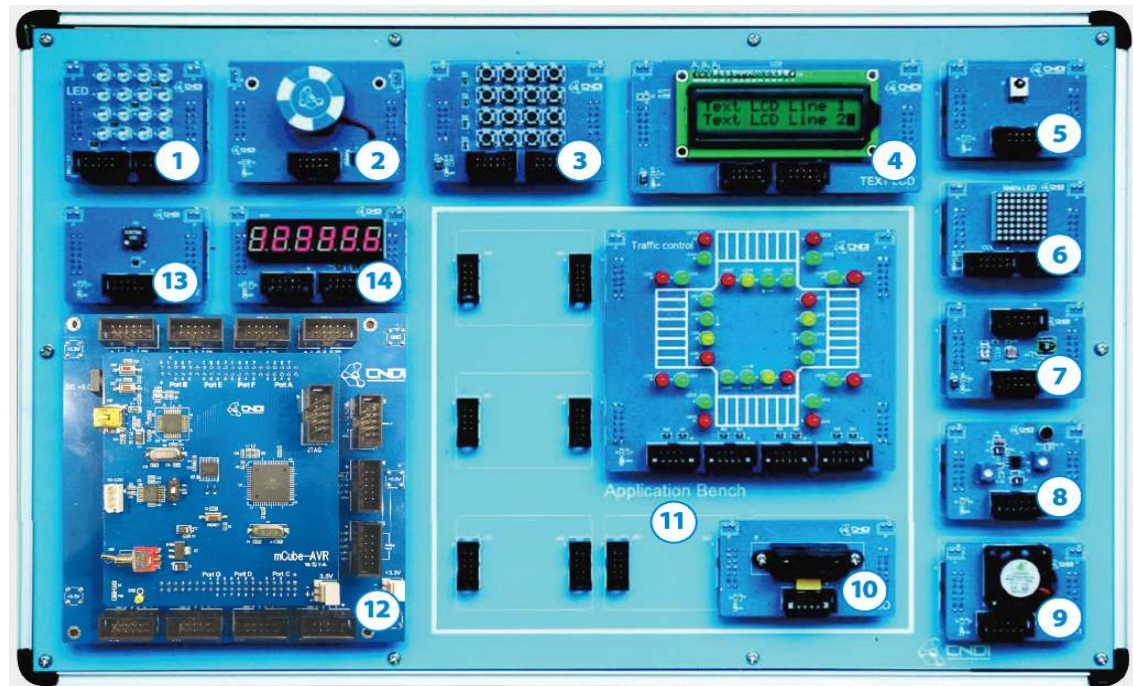
mCube-MCU



충북대학교 공동훈련센터

구성품

- LED
- Motor
- Keypad
- Text LCD
- IR
- Dot Matrix
- Sensor
- OP Amp
- FAN
- PSD
- Application Bench
- AVR Module
- Buzzer
- 7 Segment



특징

- ISP 프로그래머 내장(MKII)
- Device 간 표준 IDC Cable사용
- RS232C 기본 장착
- 주변 Device Module 화 (PORT 호환)
- ATmega128사용

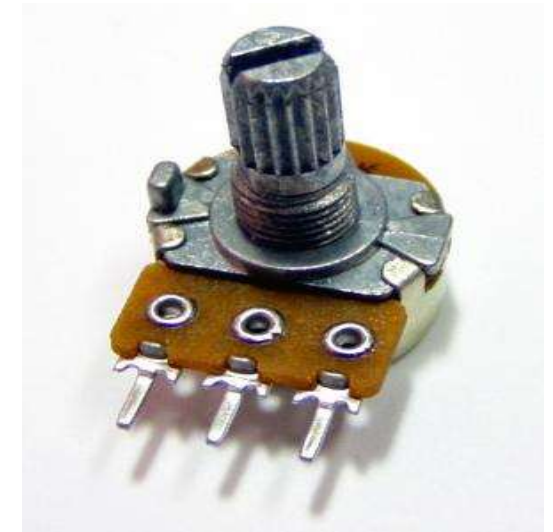
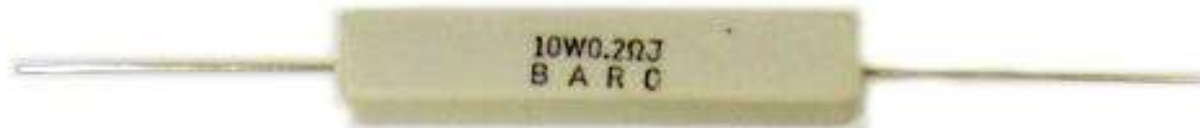
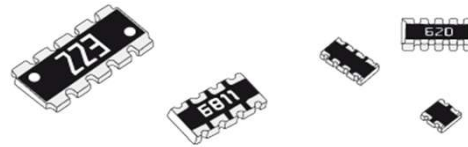


Resistor

- 기능 : 전류의 흐름을 제한함
- 단위 : Ohm (Ω)
- 고정저항
 - 탄소피막저항(일반저항)
 - 솔리드 저항
 - 권선저항
 - 금속피막저항
- 가변저항
 - 가변저항(일반형) : 주로 원형으로 손으로 돌려 저항값을 조절함
 - 반고정 저항 : 드라이버를 사용하여 저항값을 조절함



R Type

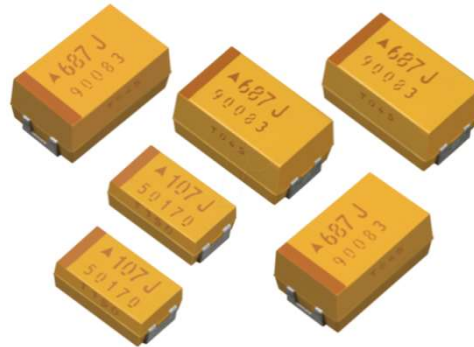
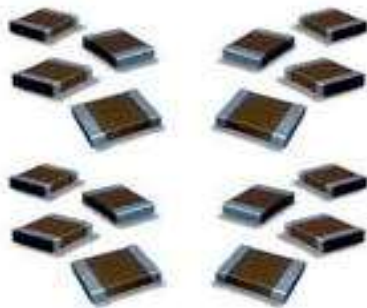


Capacitor:Condenser

- 기능: 전하를 축적함
 - 직류성분은 통과하지 못함
 - 교류성분을 그 변화하는 속도에 비례하여 흐르게 함
- 단위 : F (Farad)
 - uF, nF, pF
- 마일러,세라믹
 - 마일러 또는 세라믹 극판 사이에 전극을 도금
 - 극성이 없다
- 전해 콘덴서
 - 전극과 전극 사이에 전해질을 충전
 - 극성이 있다

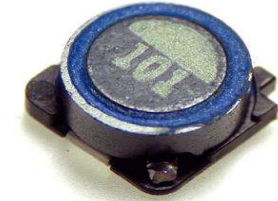


Cap Type



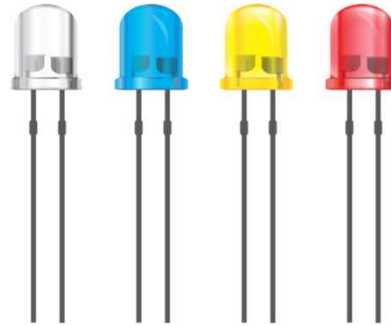
Inductor:Coil

- 기능 : 전류의 변화를 방해
- 단위 : H (Henry)
- 권선형
- Chip형



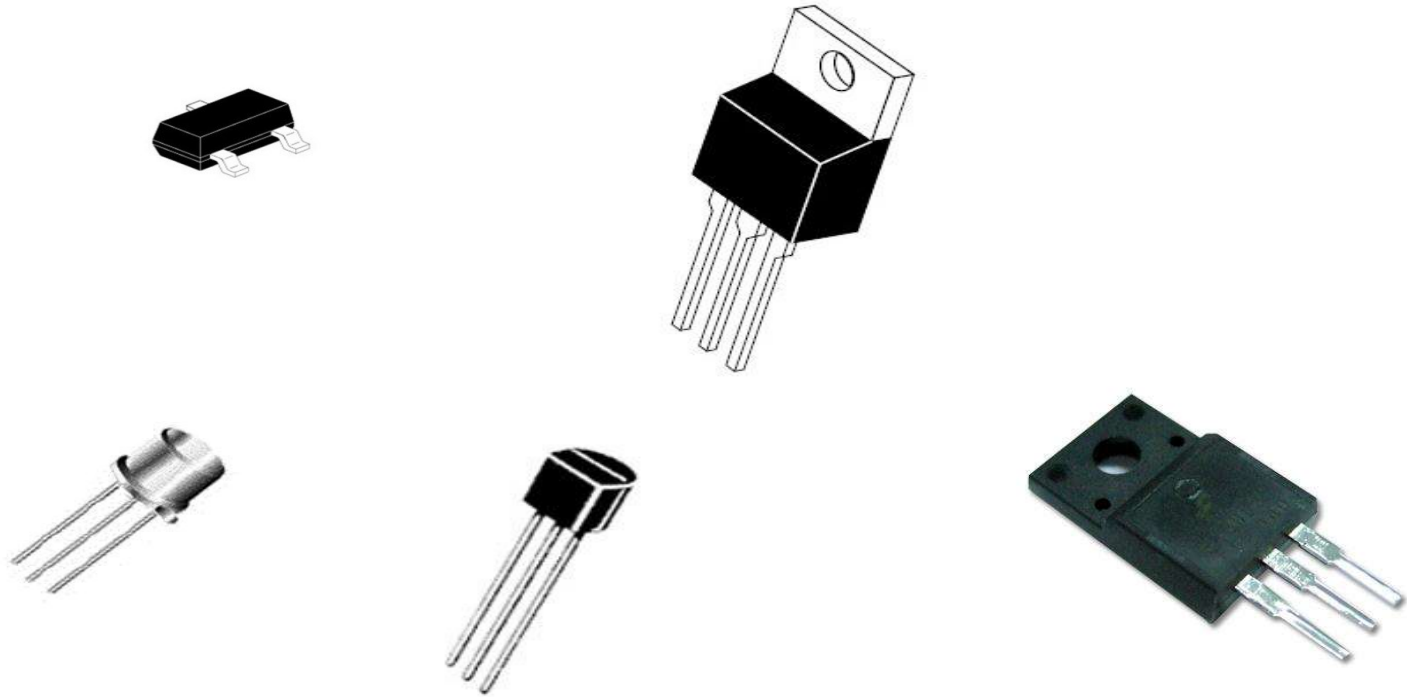
Diode

- LED
- 소신호 다이오드
- 정류다이오드
- Bridge 다이오드
- Power 다이오드
- Zener 다이오드
- Schottky 다이오드
- Fast Recovery 다이오드
- Rectifire



Transistor

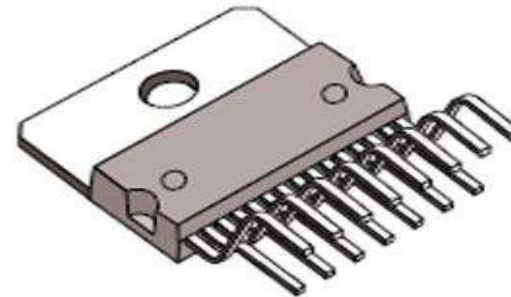
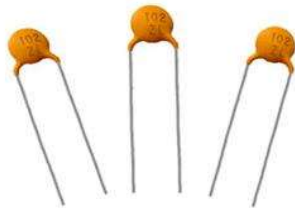
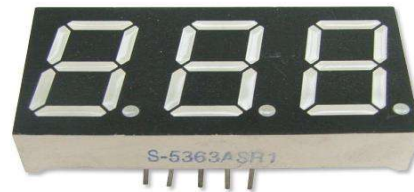
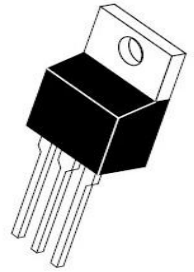
- 반도체의 기본회로 (Active Circuit)
- 증폭기능
- 스위칭 기능



IC Package

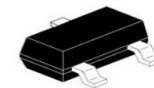
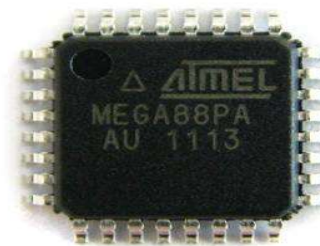
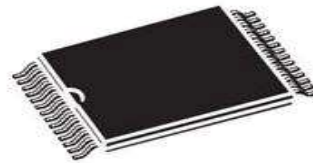


삽입실장형 부품(DIP)



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표면실장형 부품(SMD)



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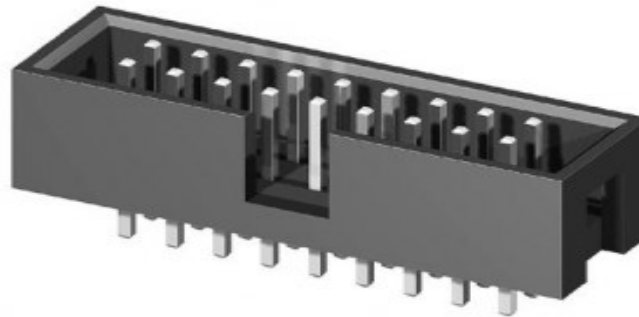
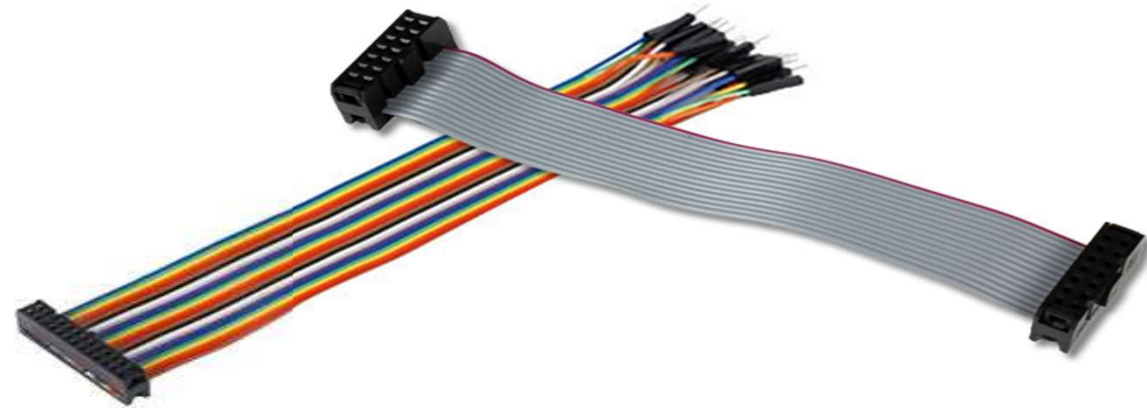
Switch

- 전기의 흐름을 제어하는 부품
- PBS [Push Button Switch]
- Toggle Switch
- Rocker Switch
- Tact Switch



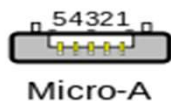
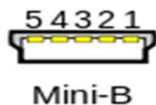
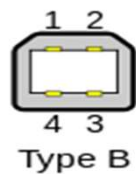
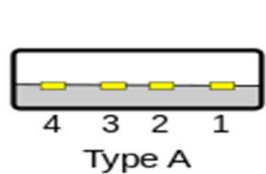
Connector

- Header
- Wafer
- Connector
- IDC Cable



기타 부품

- Crystal
- USB Mini B



USB 2.0:



A Male



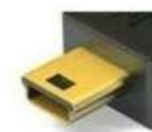
A Female



B Male



Micro B



Mini B 5 Pin

USB 3.0:



A male



A Female



B male

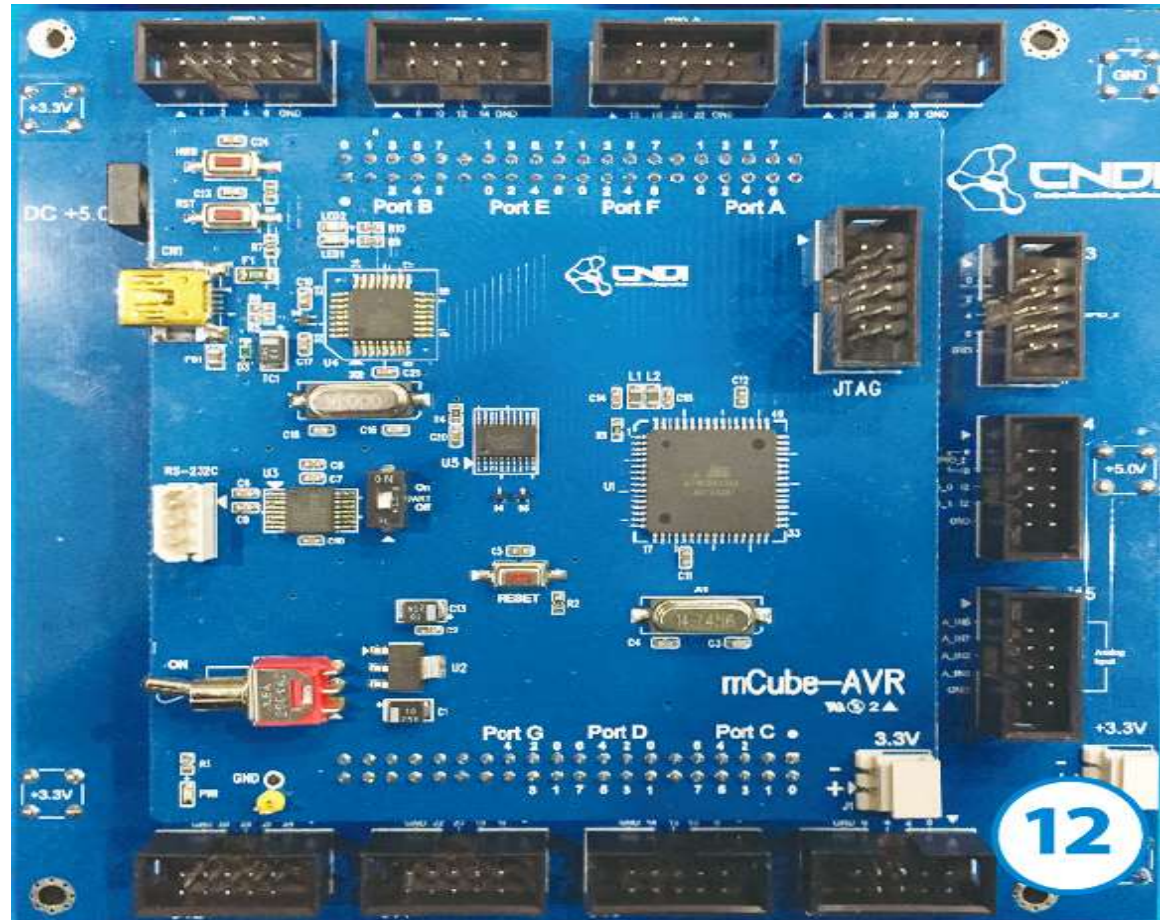


Micro B

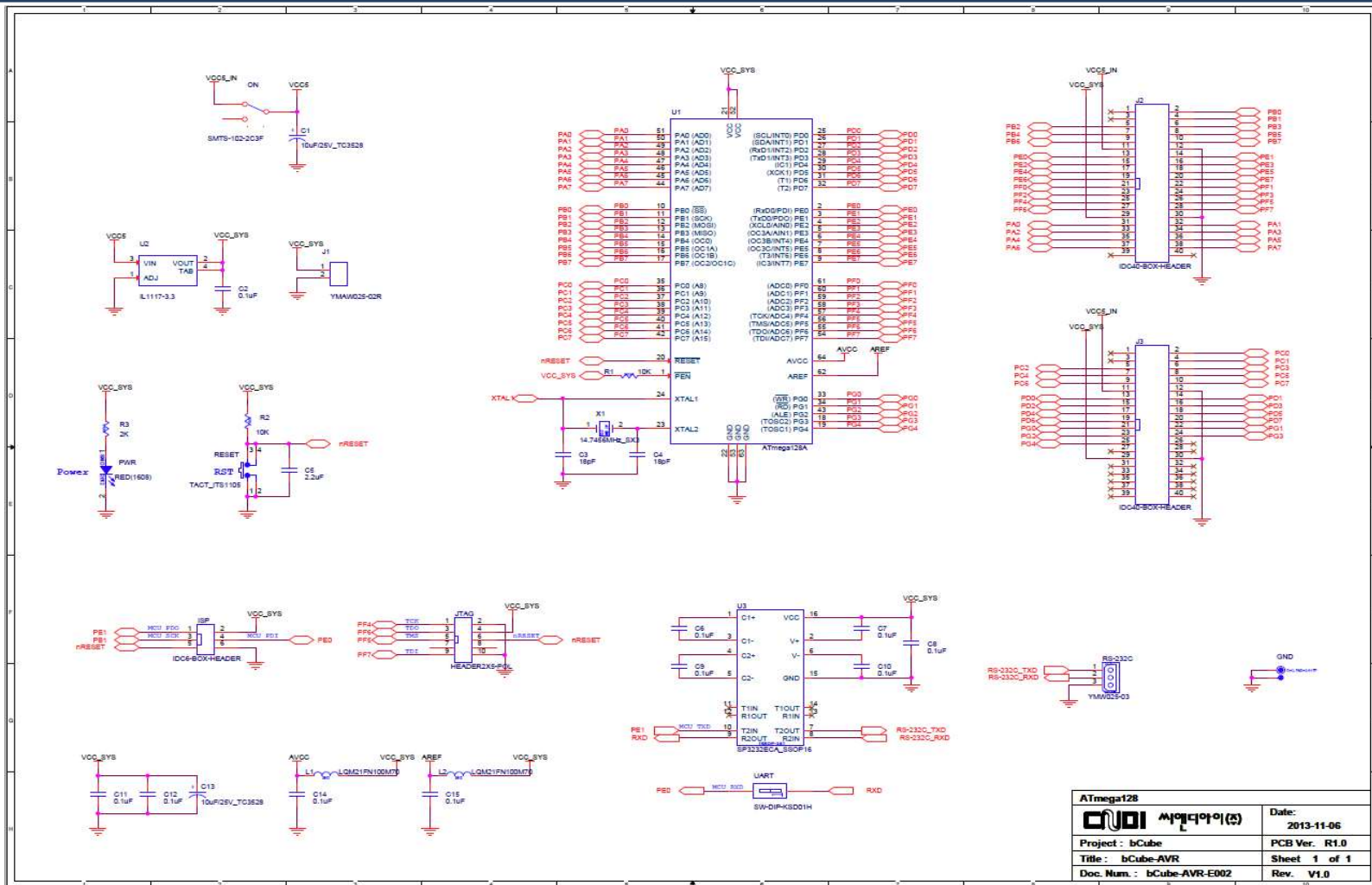


mCube AVR

- ATmega128A
 - 14.7458Mhz
- AT90USB162
 - 16.00Mhz
- LM1117-3.3V



Schematic



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Block Diagram

