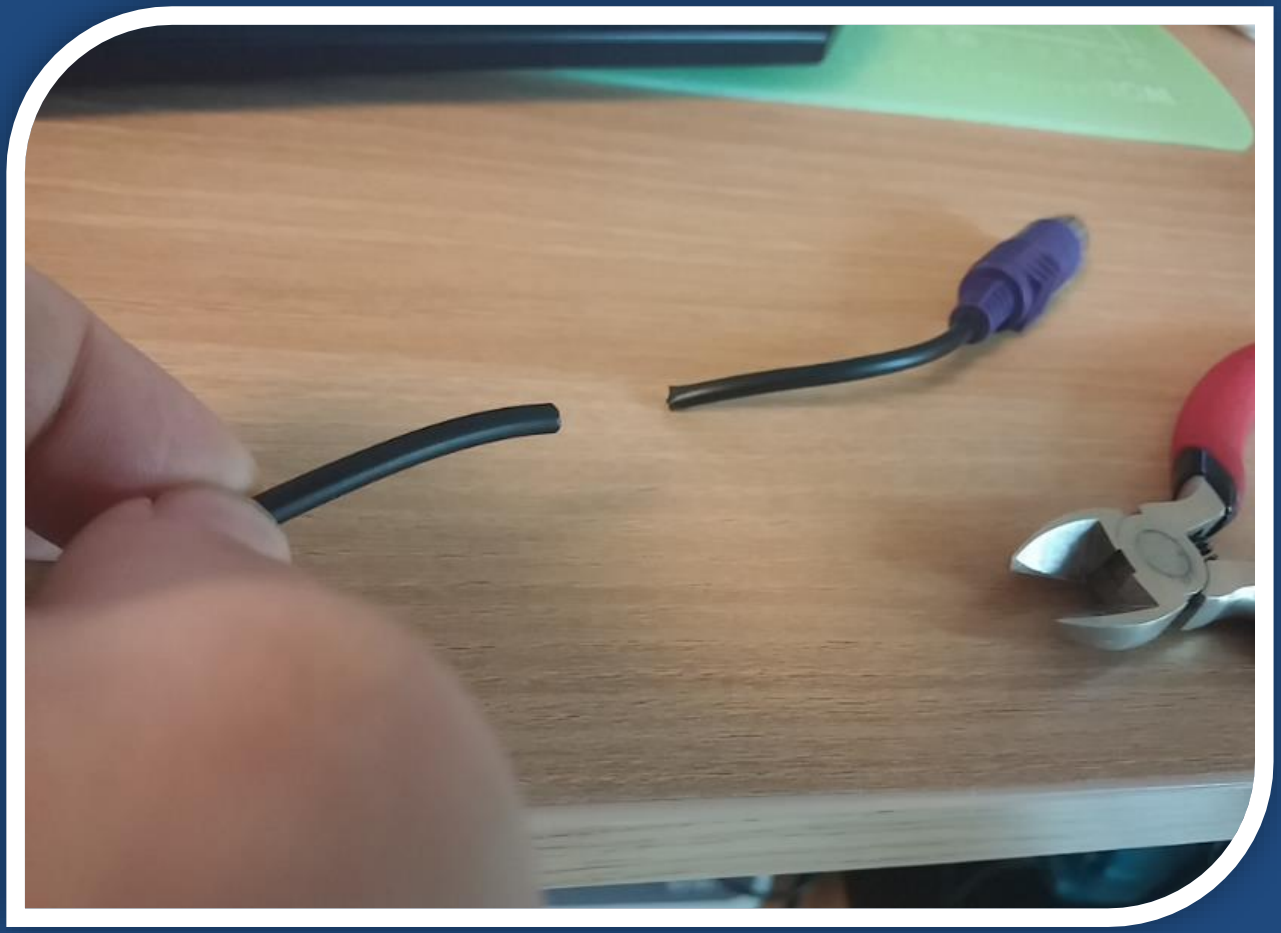
키보드 스니퍼 만들기

mongii@grayhash

PS/2 방식의 키보드를 준비한다.

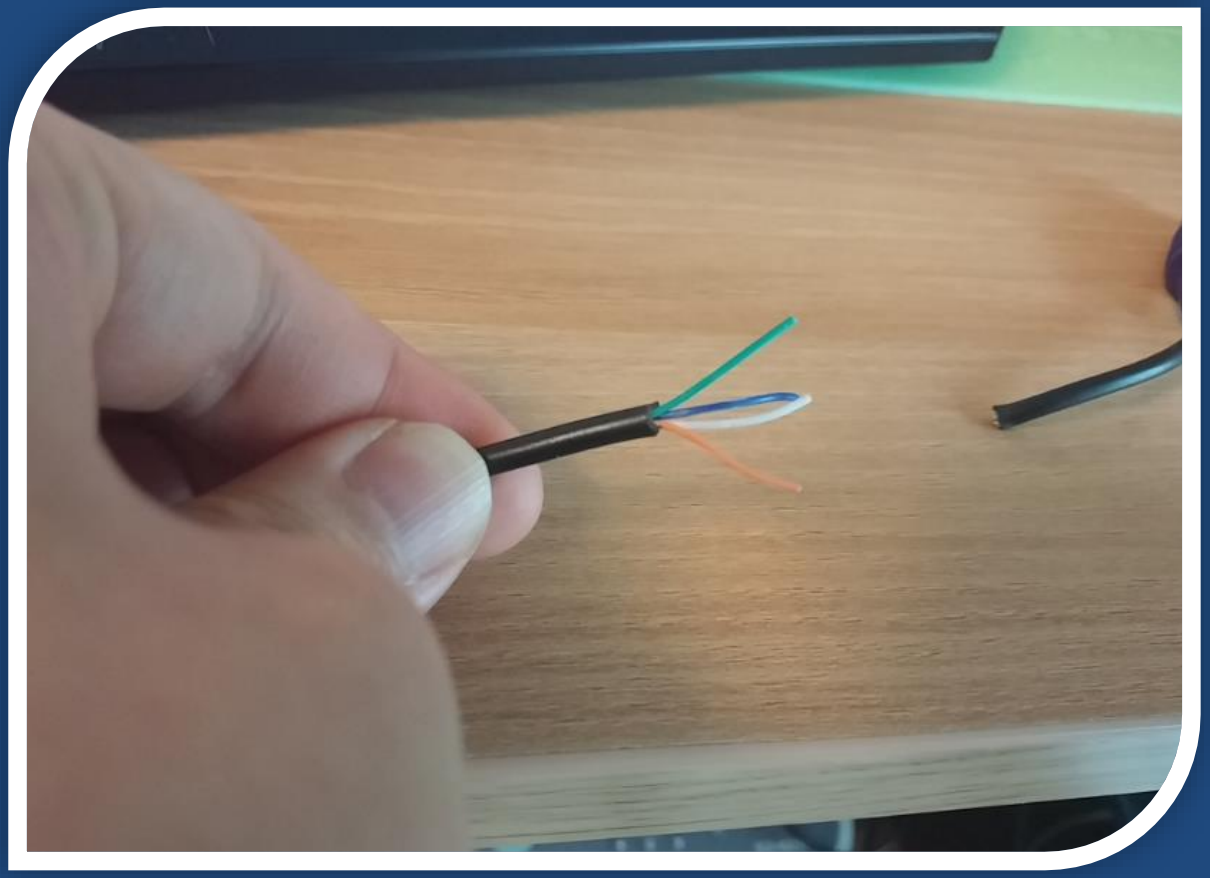
입력단자에 6개의 핀이 존재

과감히 선의 중간을 자른다.

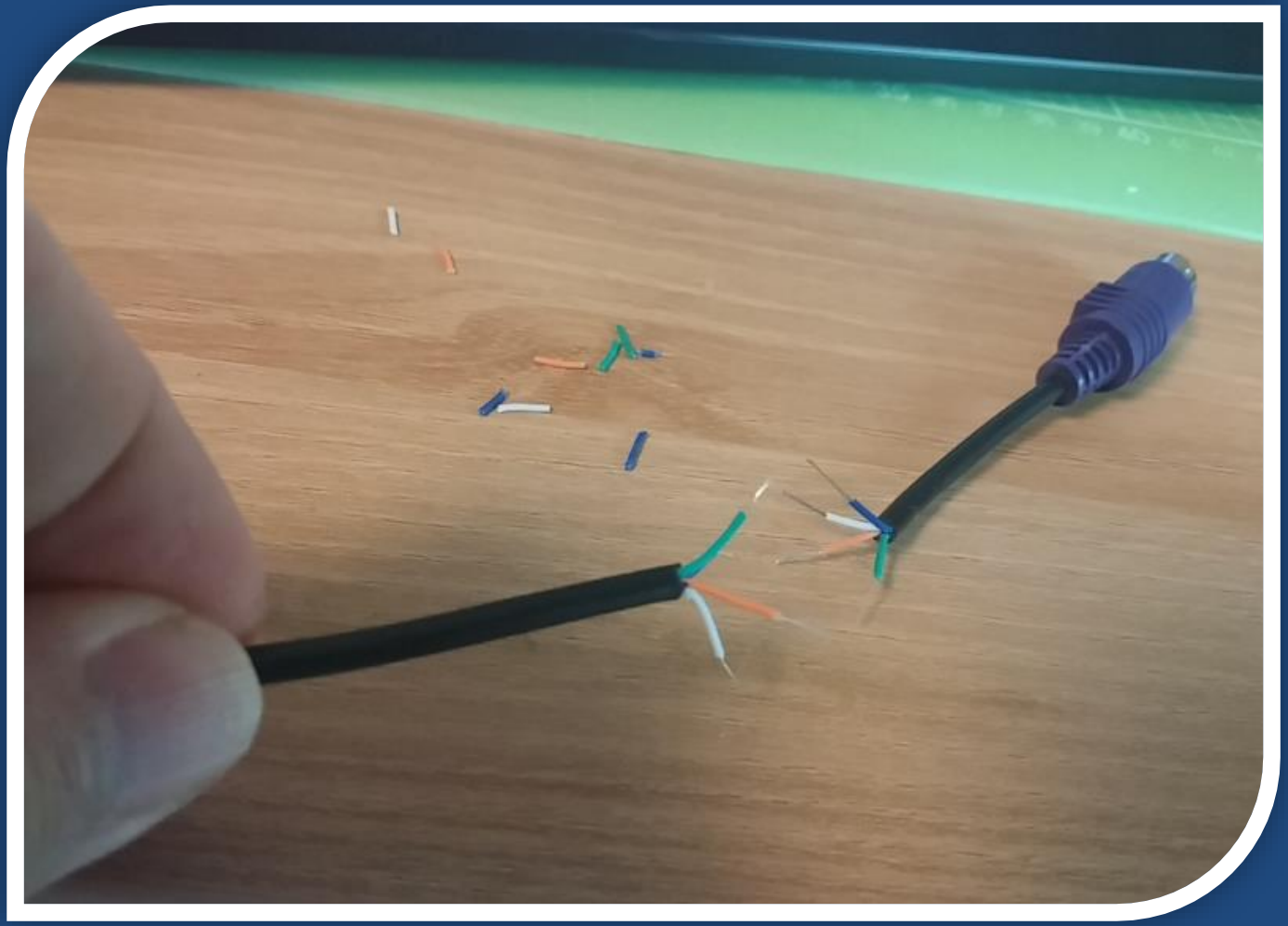


바깥 피복을 벗긴다

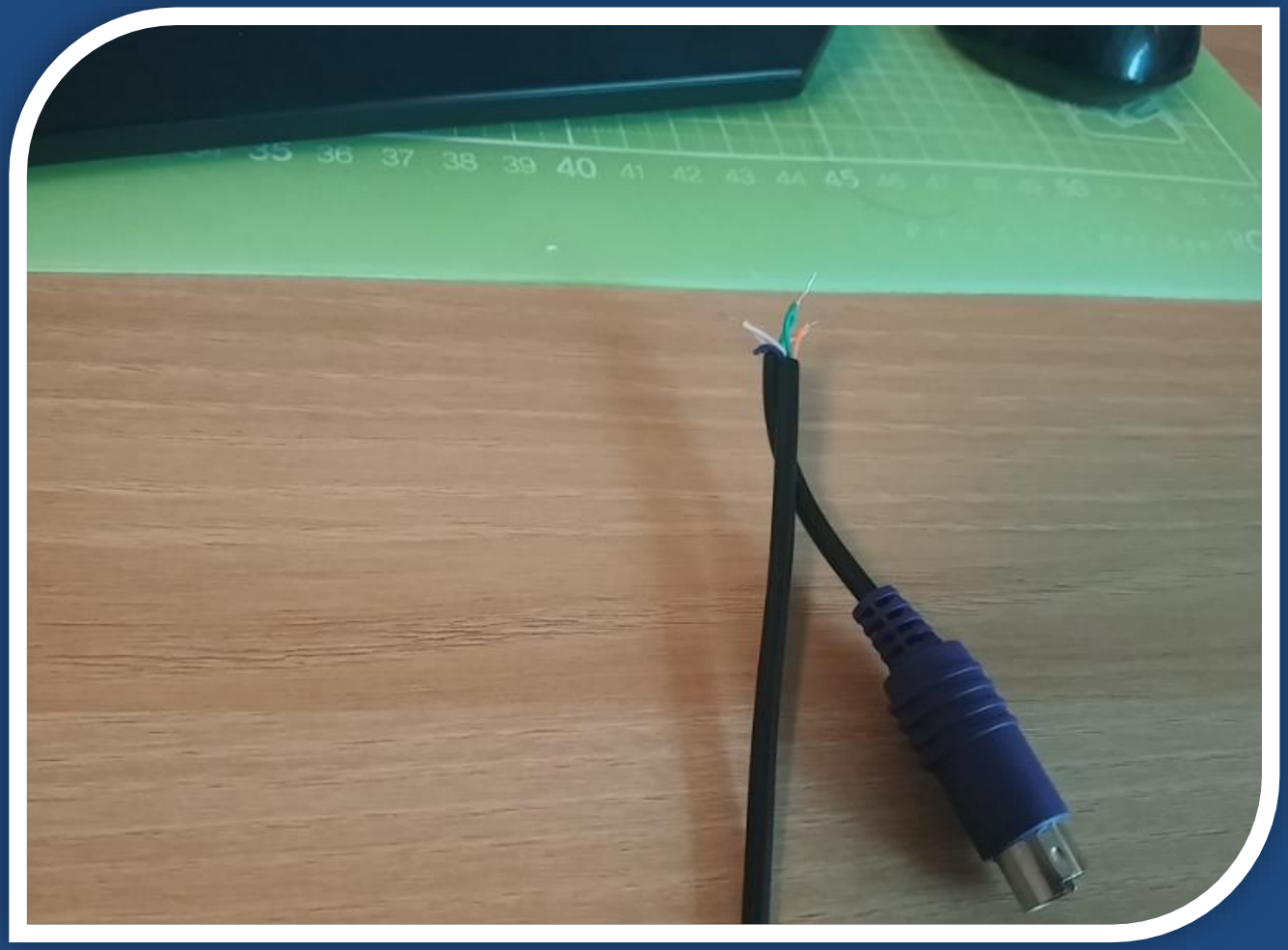
- 실제로는 6핀 중 4개만 사용된다.



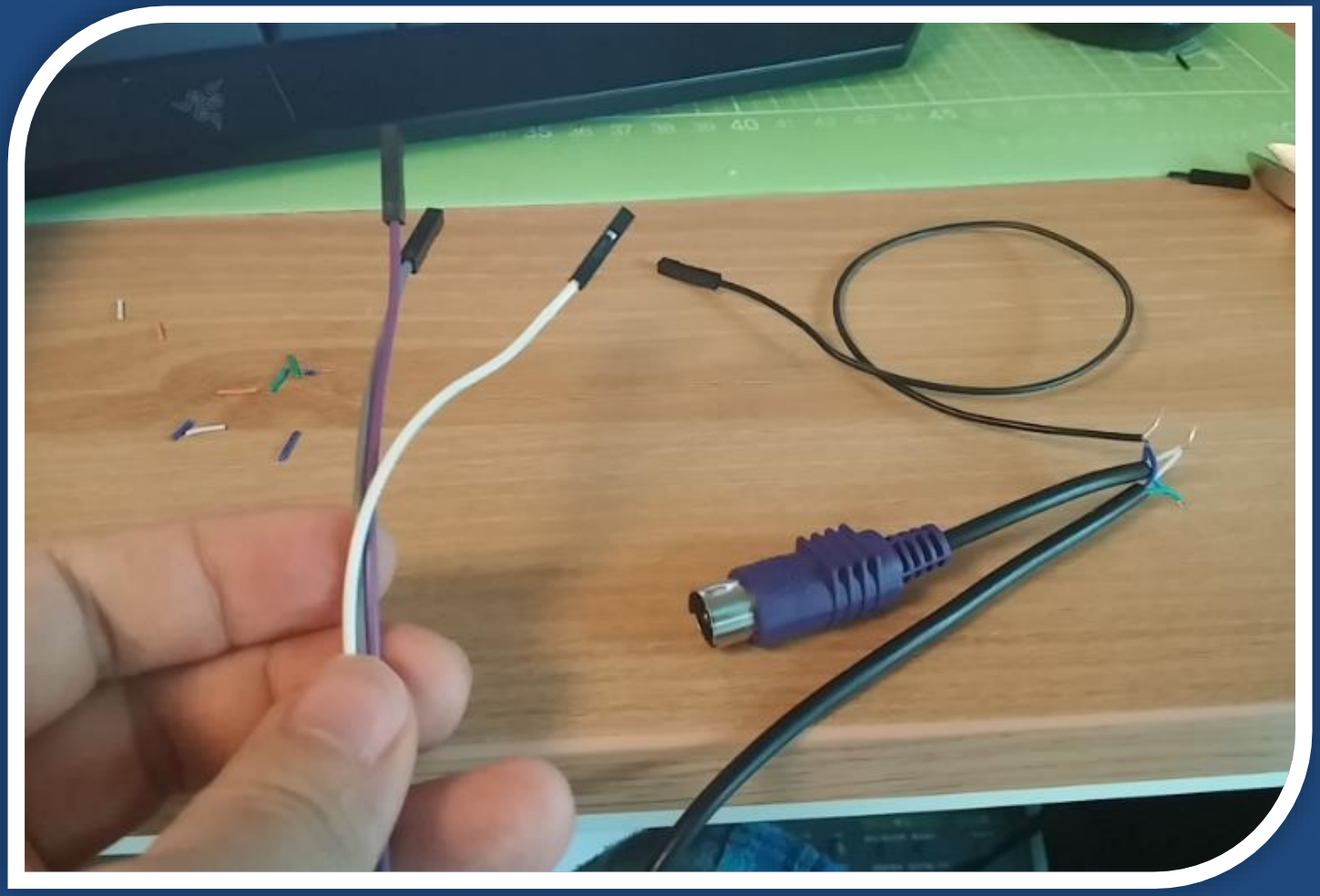
안쪽 피복을 벗긴다



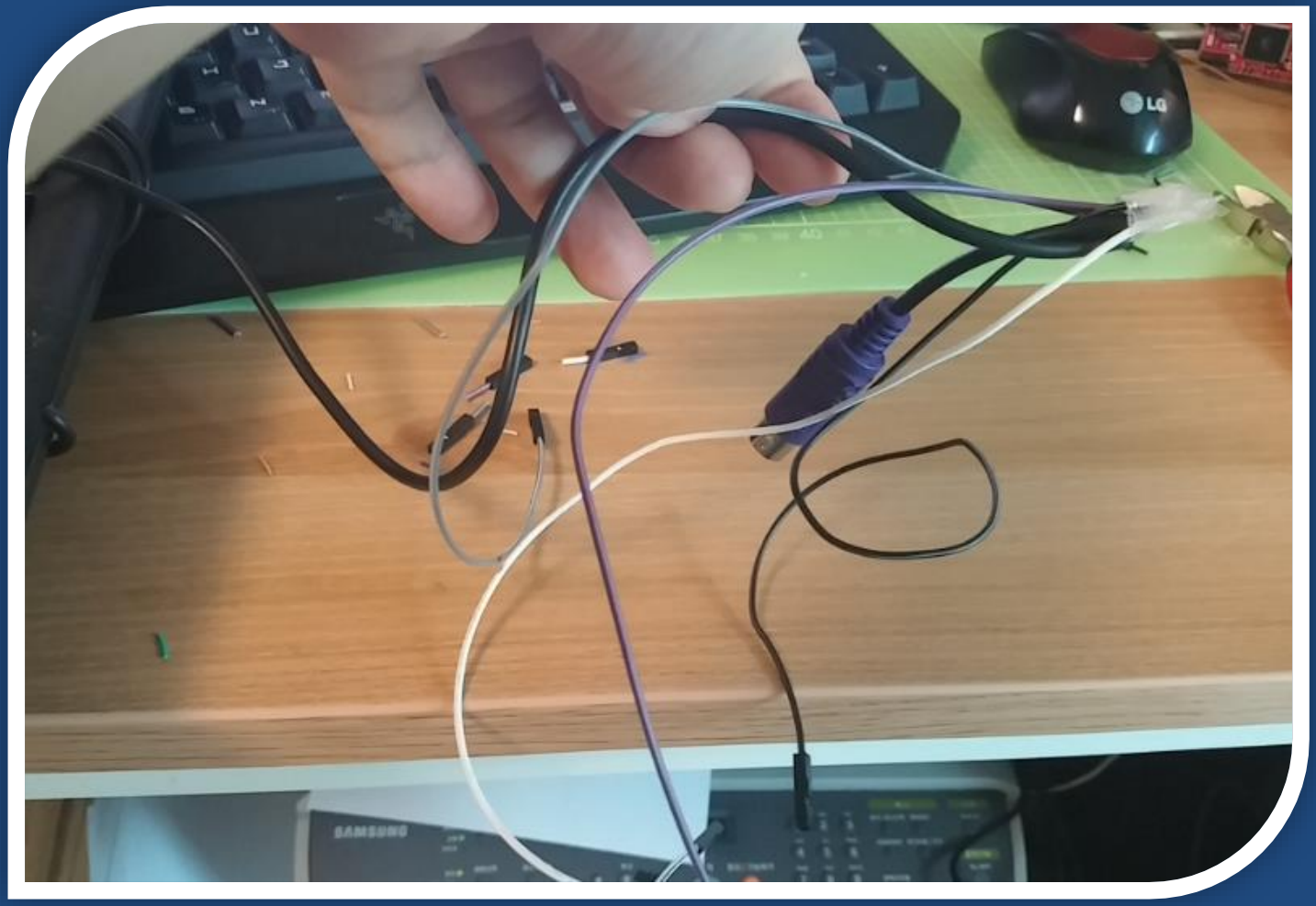
자른 선을 서로 연결한다.



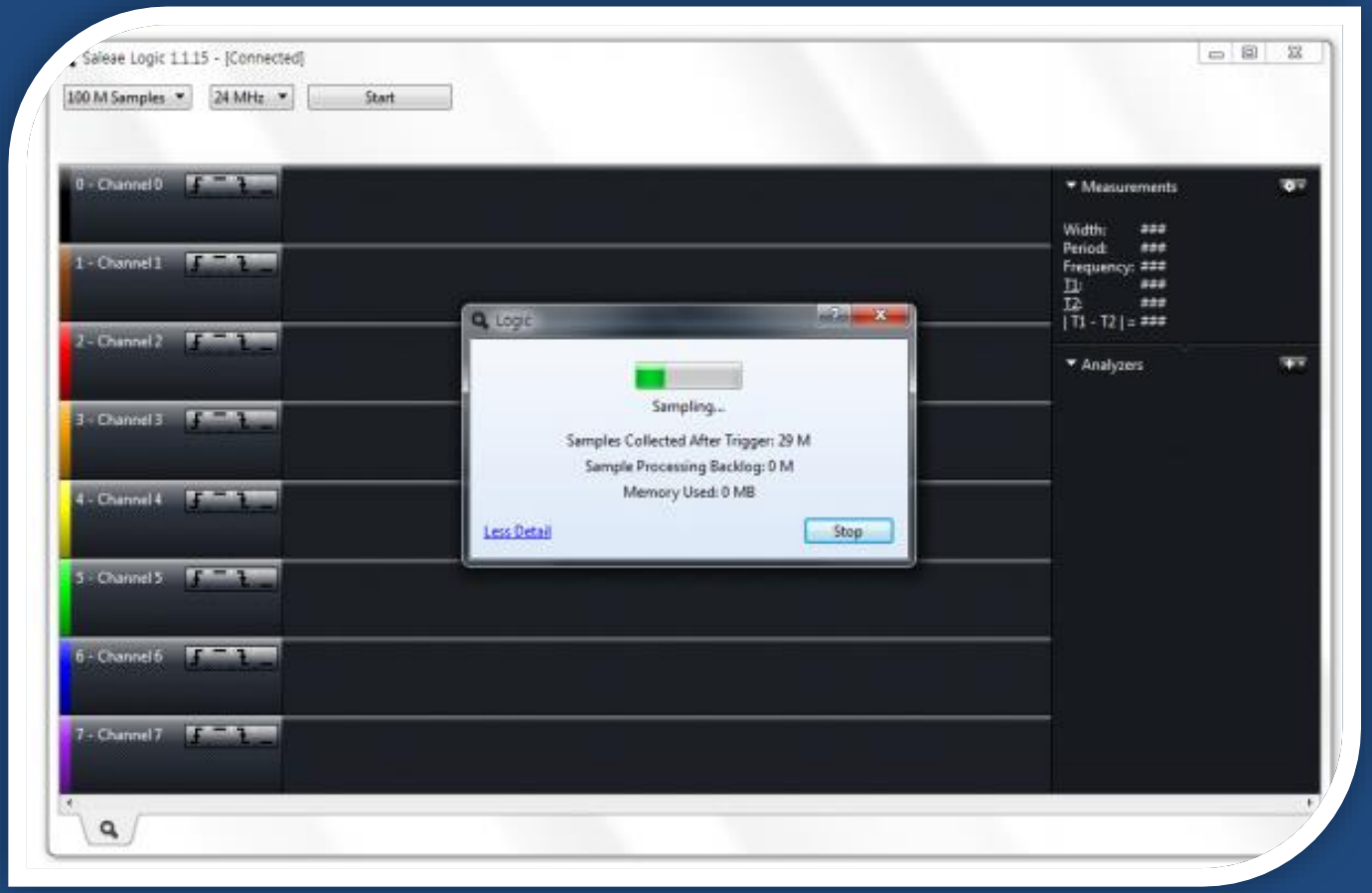
M/F 케이블을 절단한다.



케이블도 함께 각 선에 연결한다.

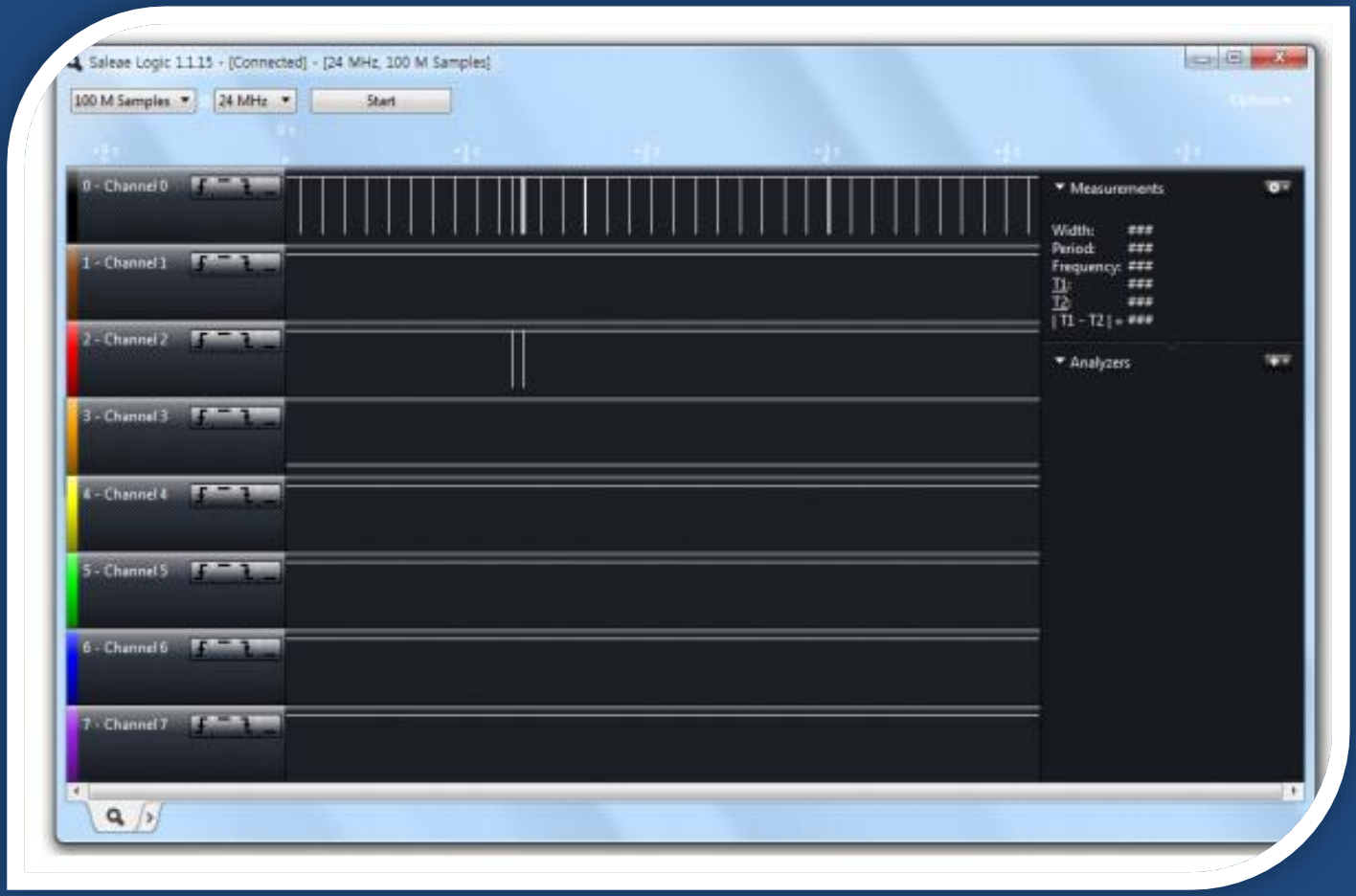


신호 분석 테스트 장면

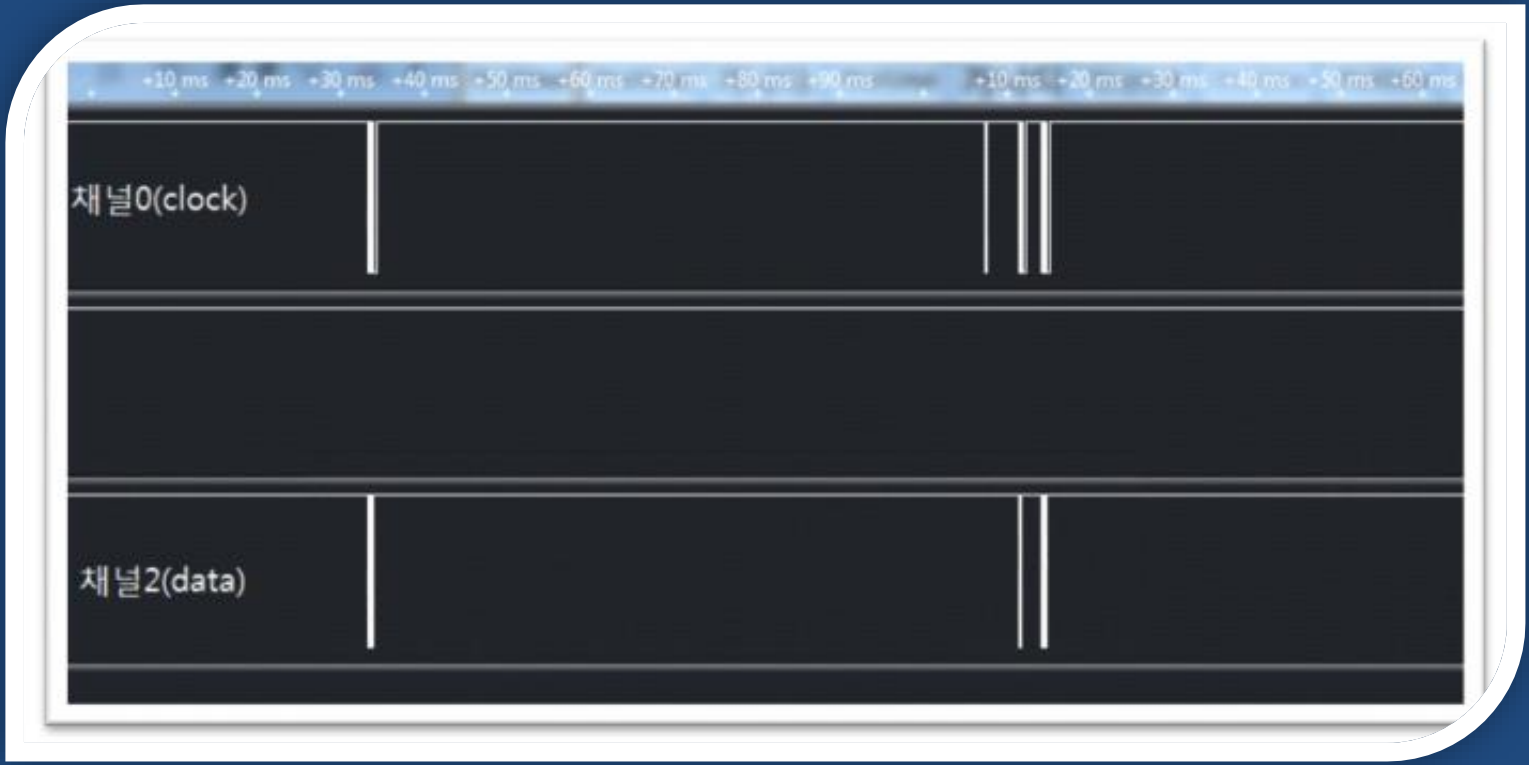

Saleae Logic 1.1.15 - [Connected]
100 M Samples
24 MHz
Start
0 - Channel 0
1 - Channel 1
2 - Channel 2
3 - Channel 3
4 - Channel 4
5 - Channel 5
6 - Channel 6
7 - Channel 7
Measurements
Width: ###
Period: ###
Frequency: ###
T1: ###
T2: ###
| T1 - T2 | = ###
Analyzers
Logic
Sampling...
Samples Collected After Trigger: 29 M
Sample Processing Backlog: 0 M
Memory Used: 0 MB
Less Detail
Stop

각 핀의 용도가 확인된다.

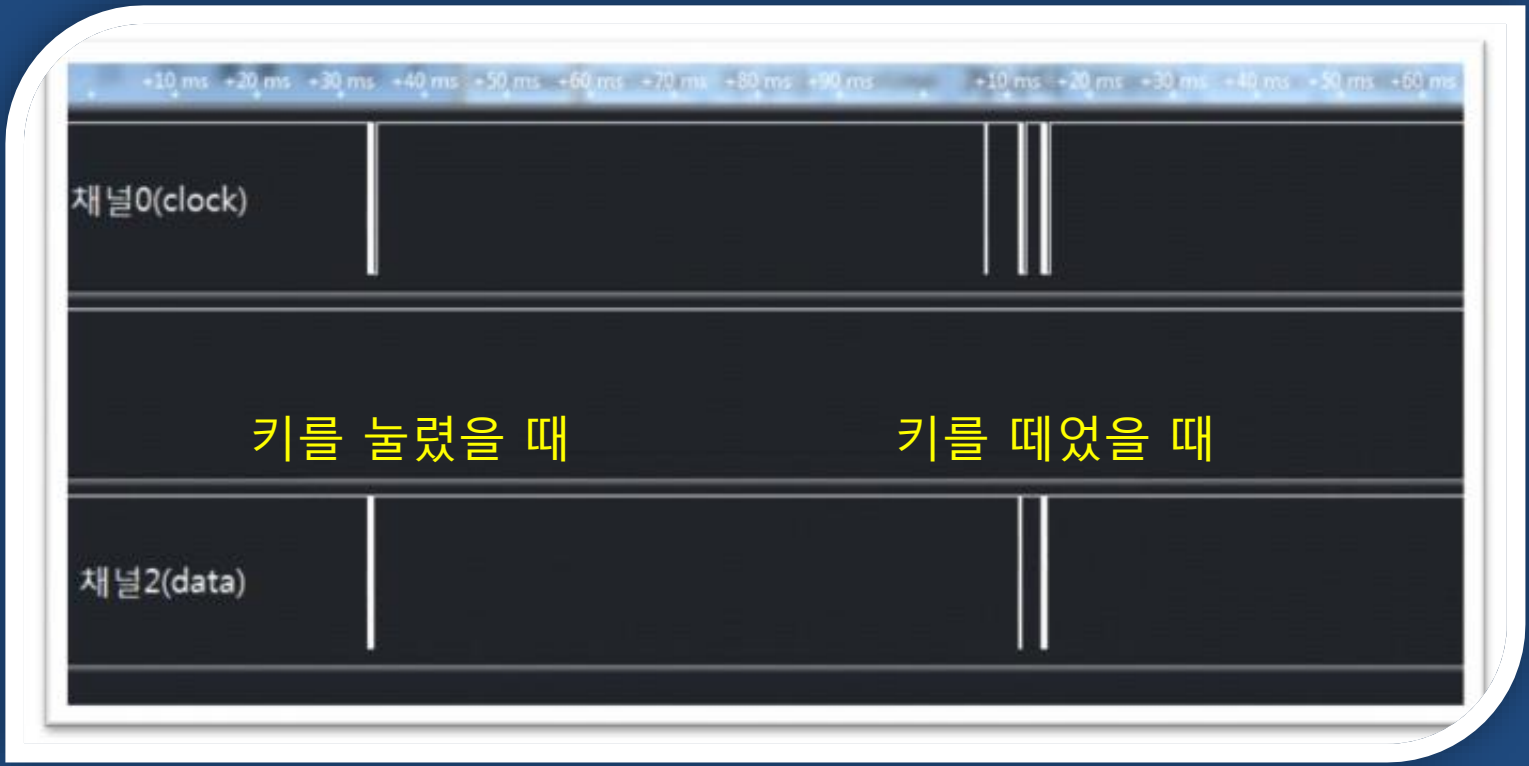
- CLOCK, DATA, VCC, GND



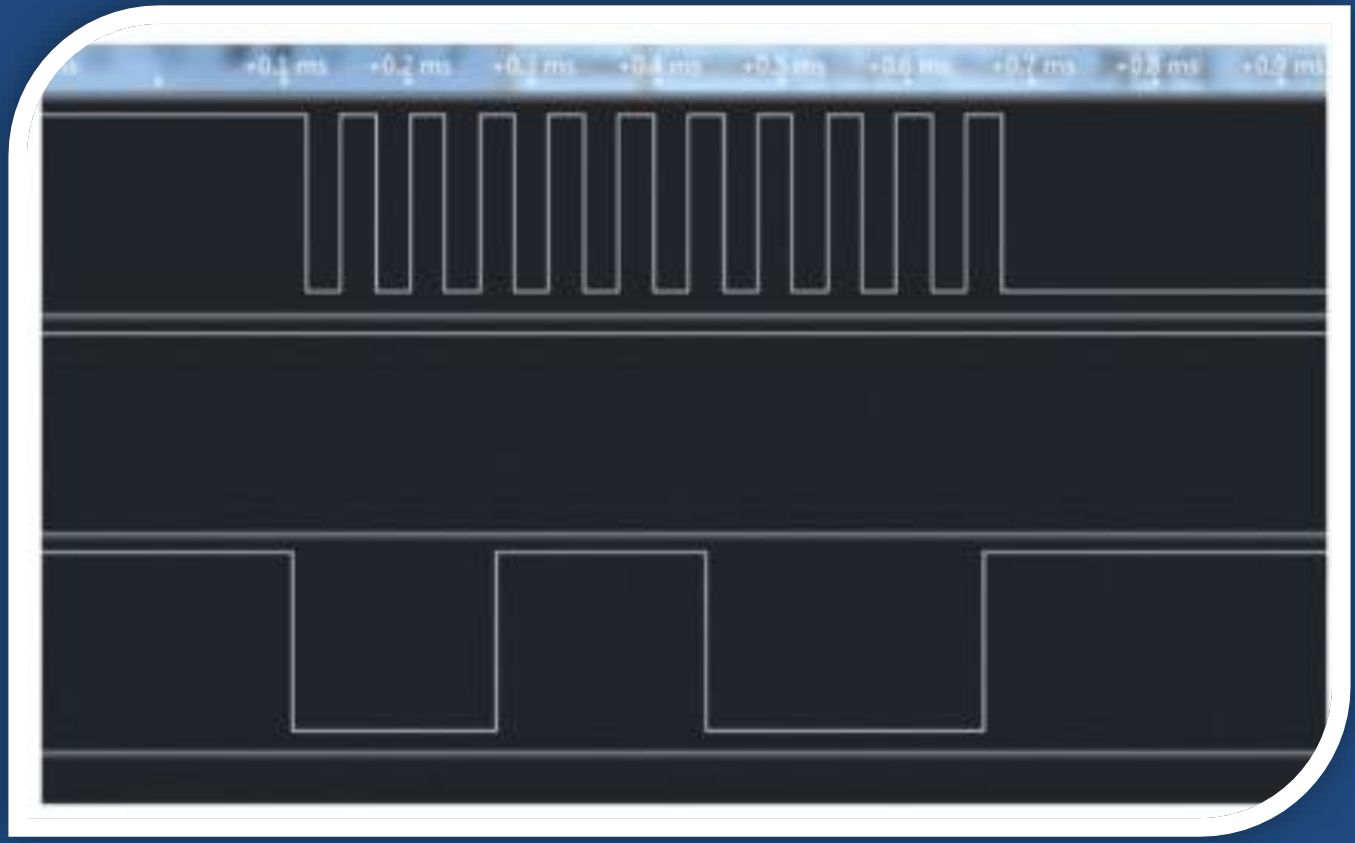
CLOCK/DATA 확대



CLOCK/DATA 확대

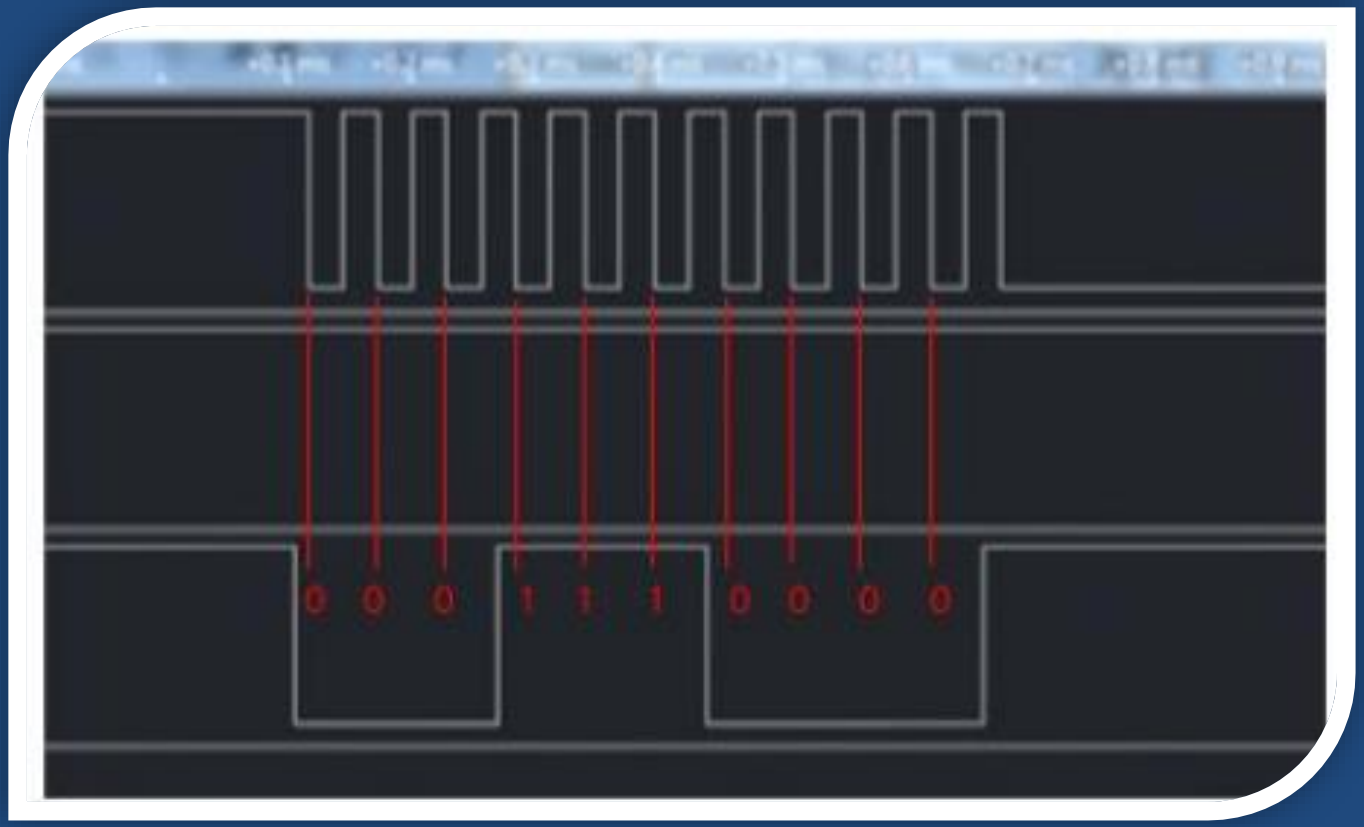


CLOCK/DATA 확대

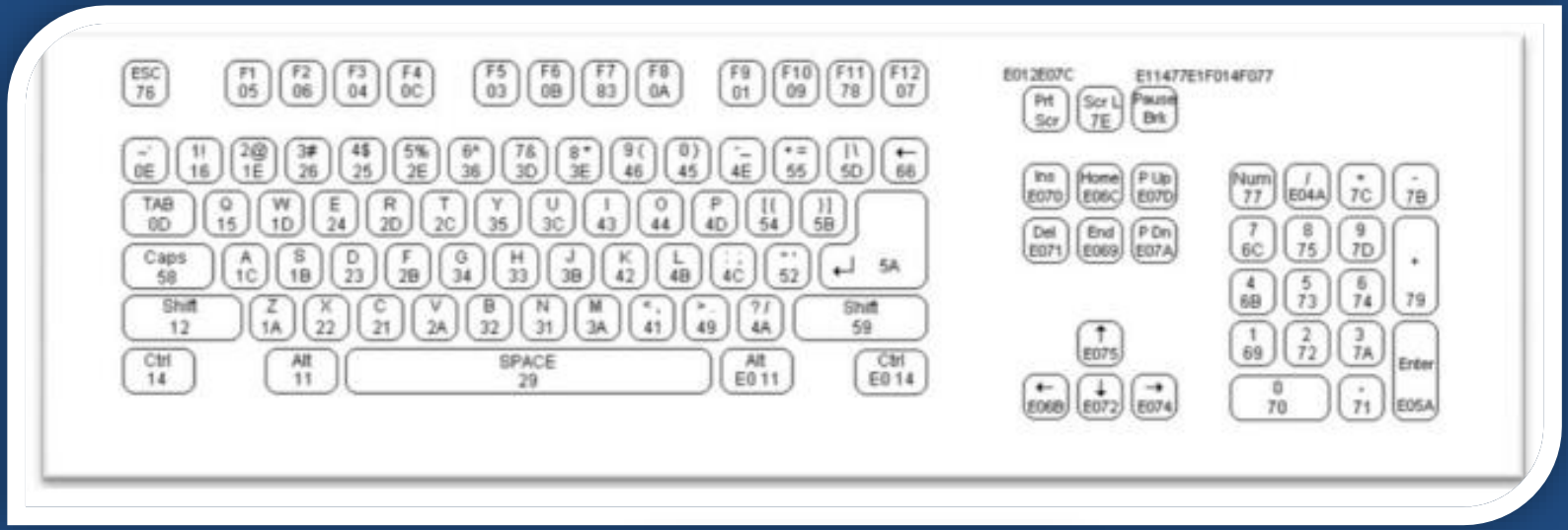


값 분석

- 반대 순서로, 0b00011100 (0x1C)



결과 확인


ESC 76
F1 05
F2 06
F3 04
F4 0C
F5 03
F6 0B
F7 83
F8 0A
F9 01
F10 09
F11 78
F12 07
E012E07C
E11477E1F014F077
Prt Scr
Scr L 7E
Pause Brk
Ins E070
Home E06C
P Up E07D
Del E071
End E069
P Dn E07A
Num 77
/ E04A
* 7C
- 7B
7 6C
8 75
9 7D
+ 79
4 6B
5 73
6 74
1 69
2 72
3 7A
Enter E05A
0 70
. 71
E075
E06B
E072
E074
Caps 58
Shift 12
Shift 59
Ctrl 14
Alt 11
SPACE 29
Alt E011
Ctrl E014
5A

실습 문제

- AVR을 이용하여 키보드 신호 스니퍼를 만들어 보시오.

- 힌트 : 인터럽트 사용

- 목표1 : DATA 신호를 0과 1로 UART 출력
- 목표2 : DATA 신호를 분석하여 문자로 출력