

C0168 Universal Learning Remote Control Module (ULRC)

(Note: Refer to C0168-A.pdf for schematic)

Communication protocol : Single byte communication, RS232, 8-N-1, baud rate: 9600bps

1. Learn code (1 byte)

D7	D6	D5	D4	D3	D2	D1	D0
0	0	x	x	x	x	x	x

D7-D6 : 00 --- Learn code command

D5-D0 : code id 0 – 63

PC operation : PC sends 0b00xxxxxx (binary format) via RS232 port to ULRC. LED D2 "ON". Point the source remote control at around 20cm from the IR receiver U2 and press a button (say TV power ON). D2 LED flashes to indicate valid signal and then "OFF" when finished. If there is no IR signal or there is any error, ULRC will output ASCII "E" (0x45). Else, ULRC outputs ASCII "O" (0x4F) if learn success.

Example:

PC sends 0b00100000 (code id 32) to ULRC module via COM PORT, LED D2 "ON". Point a TV remote controller to the IR receiver U2 and press "power ON". ULRC outputs ASCII "O" to indicate a successful "learn" action. Valid TV power ON code now stored in the AT24C256 / 24LC256 I2C eeprom.

Keypad operation : Hold Learn key SW1 and press a function button (K1 – K9). LED D2 "ON". Point the source remote control at around 20cm from the IR receiver U2 and press the button to learn on the source remote control. D2 LED flashes and then "OFF" when finished.

2. IR code fire

D7	D6	D5	D4	D3	D2	D1	D0
0	1	x	x	x	x	x	x

D7-D6 : 01 --- fire IR code command

D5-D0 : code id 0 – 63

PC operation : PC sends 0b01xxxxxx via RS232 port to ULRC. LED D2 flashes and IR signal sent via D1 (IR_LED). ULRC outputs ASCII "E" (0x45) if error or empty code, else it will output ASCII "O" for a successful "send" action.

Example:

PC sends 0b01100000 (code id 32) to ULRC module via COM PORT, LED D2 flashes and IR signal sent from D1. ULRC outputs ASCII "O" to indicate a successful "send" action.

Keypad operation : just press the key learned on ULRC.