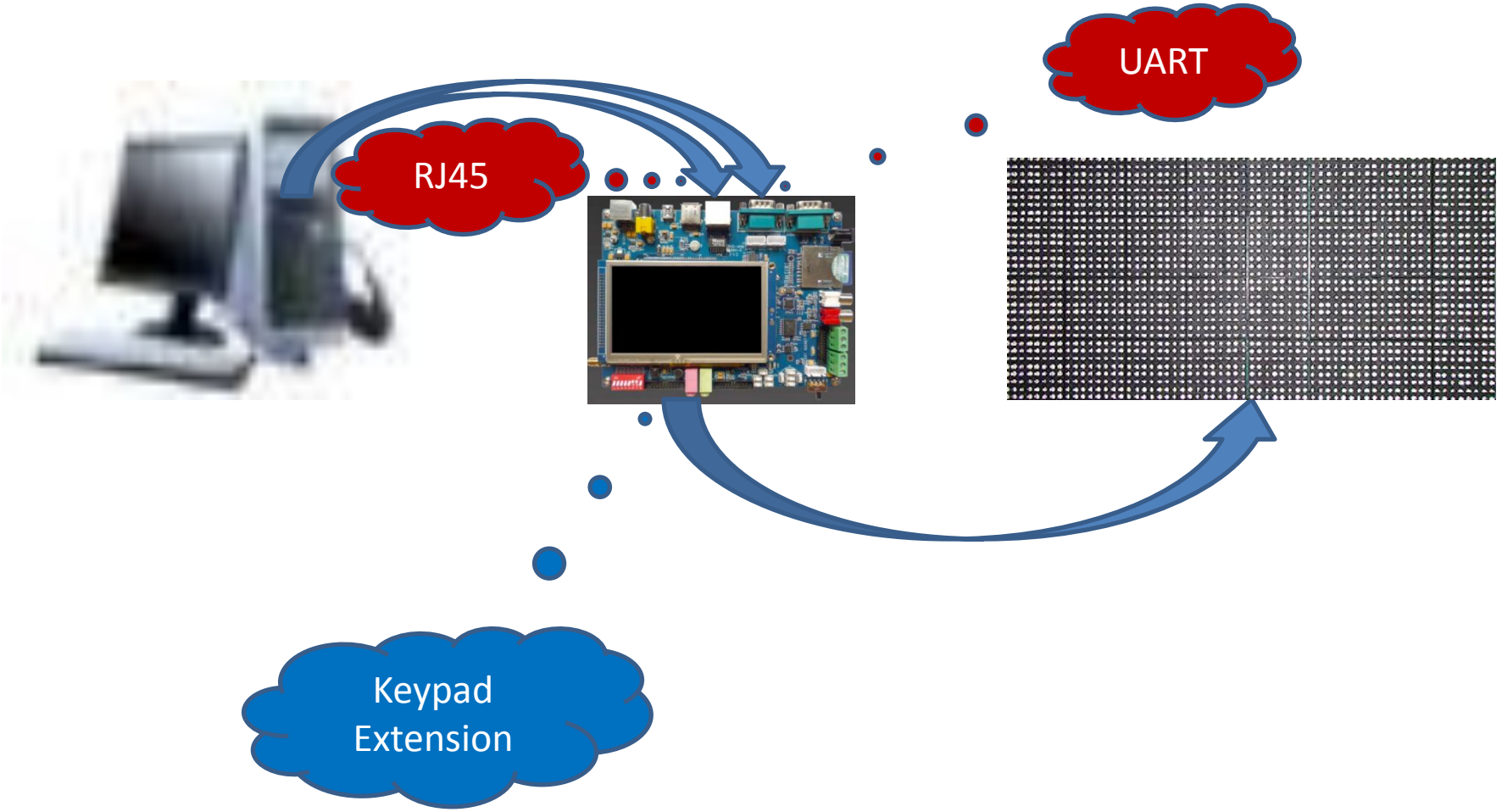
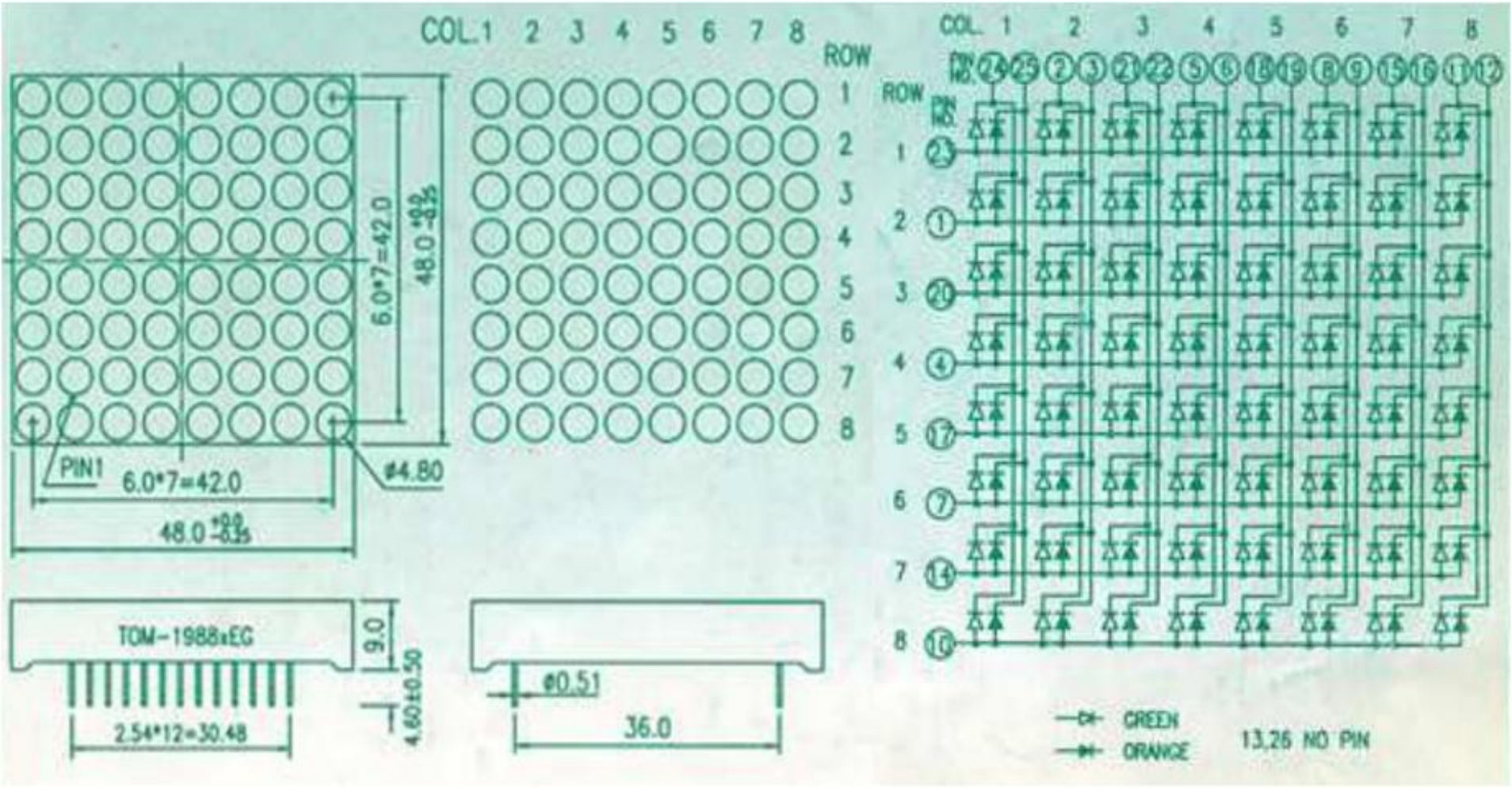
LED Dot Matrix Experiment

Frame



8*8 LED Dot Matrix



64x32 8x4 (8x8)

4953 or 2311

Dual P-Chanel Enhancement Mode MOSFET

138

3-to-8 line decoder/demultiplexer

245

3-state bus compatible outputs in both send and receive directions.

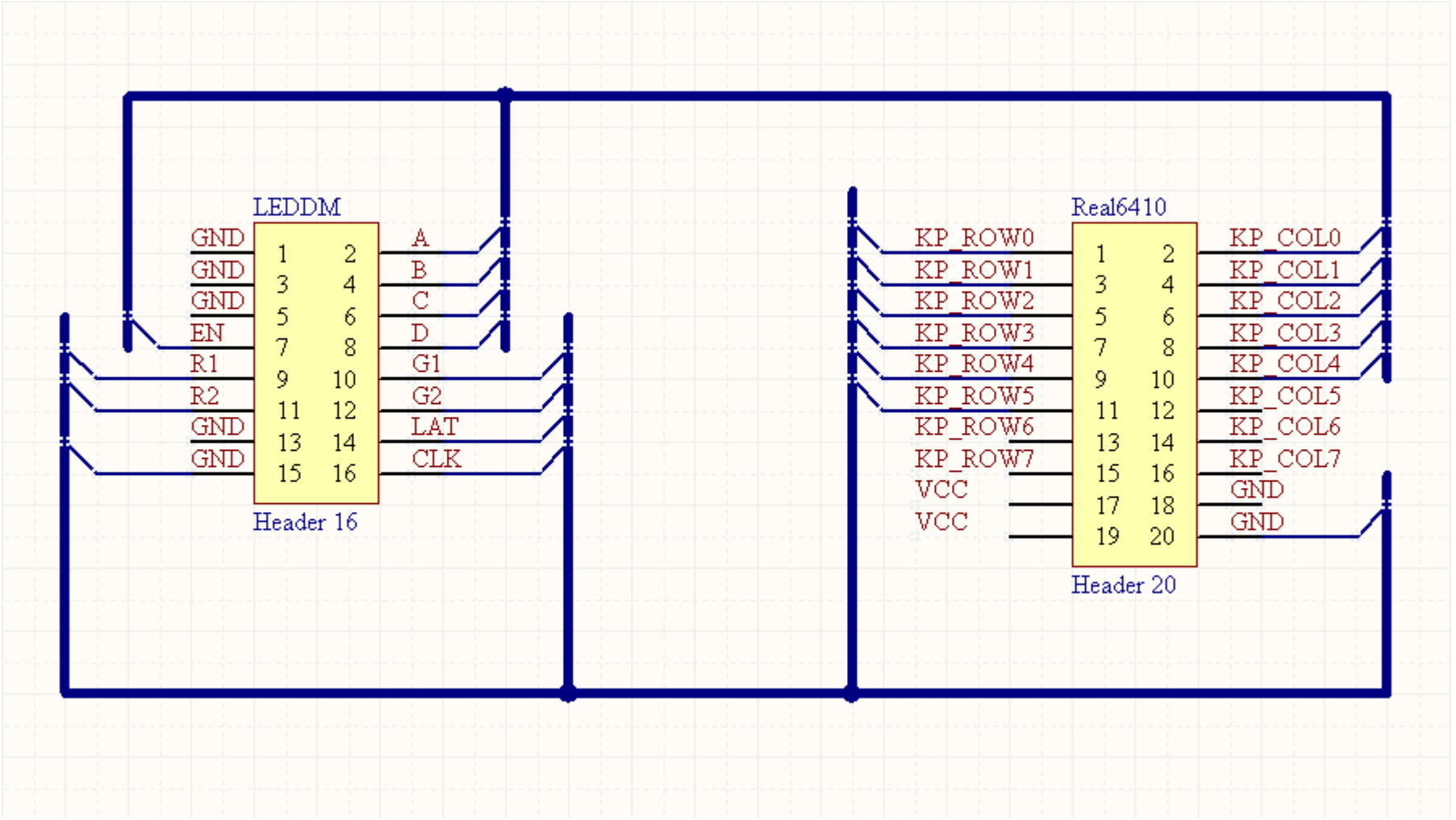
595

8-bit serial-in, paralled-out shift register that feeds an 8-bit D-type storage register.

Schematic

schematic

Interface


LEDDM
GND
GND
GND
EN
R1
R2
GND
GND
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
G1
G2
LAT
CLK
Header 16
Real6410
KP_ROW0
KP_ROW1
KP_ROW2
KP_ROW3
KP_ROW4
KP_ROW5
KP_ROW6
KP_ROW7
VCC
VCC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
KP_COL0
KP_COL1
KP_COL2
KP_COL3
KP_COL4
KP_COL5
KP_COL6
KP_COL7
GND
GND
Header 20

Function

- Stop
- Start
- Pause
- Resume
- Speed Up
- Speed Down
- Update Display
- Exit

Resource

- ASC16: 8*16 ASCII dot matrix library
- ASC32: 16*32 ASCII dot matrix library
- HZK16: 16*16 Chinese dot matrix library
- HZK32: 32*32 Chinese dot matrix library
- disptext.txt : storage an text string to be displayed

Chinese dot matrix library

- Byteperchinese = (width/8)*height;
- Offs = ((ch-0xa1) * 94 + (cl – 0xa1)) * Byteperchinese

Application

- leddmio.h: the definition of IOCTL commands
- testleddm.c: the application for control and update display
  - read display text
  - transform the text to dot matrix using dot matrix library
  - send the dot matrix data to driver
  - control the driver to update display

Driver

- leddmio.h: the definition of IOCTL commands
- leddm.h: the definition of driver and GPIO
- leddm.c: LED dot matrix driver
  - get new dot matrix data from application
  - rolling the dot matrix data on LED dot matrix