

KITLEDBKLT16EVBE Evaluation Board

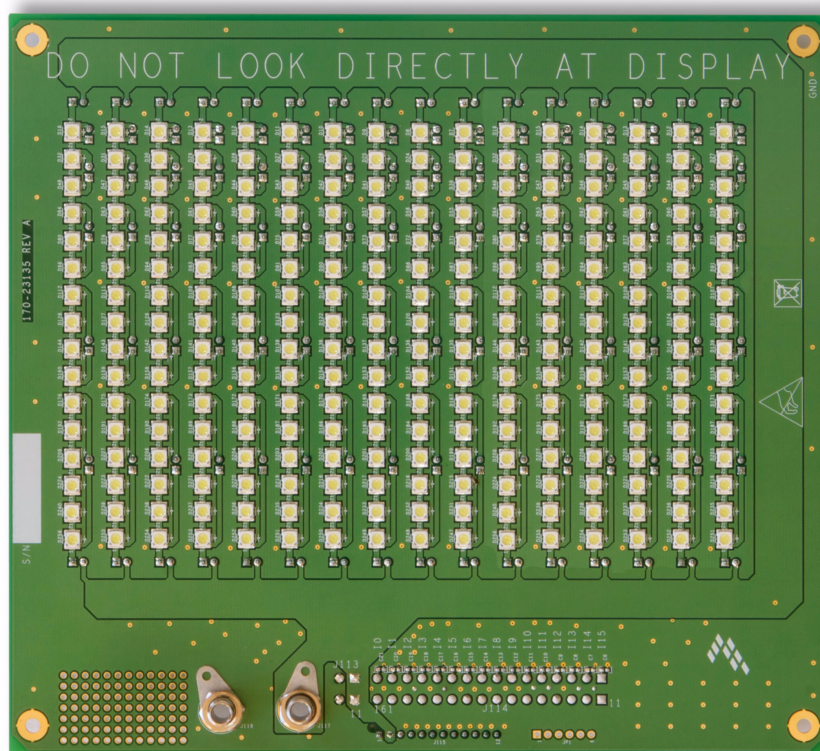


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1 Kit Contents / Packing List

- LED Load Board

2 Important Notice

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This evaluation kit is intended for use of ENGINEERING DEVELOPMENT OR EVALUATION PURPOSES ONLY. It is provided as a sample IC pre-soldered to a printed circuit board to make it easier to access inputs, outputs, and supply terminals. This EVB may be used with any development system or other source of I/O signals by simply connecting it to the host MCU or computer board via off-the-shelf cables. This EVB is not a Reference Design and is not intended to represent a final design recommendation for any particular application. Final device in an application will be heavily dependent on proper printed circuit board layout and heat sinking design as well as attention to supply filtering, transient suppression, and I/O signal quality.

The goods provided may not be complete in terms of required design, marketing, and or manufacturing related protective considerations, including product safety measures typically found in the end product incorporating the goods. Due to the open construction of the product, it is the user's responsibility to take any and all appropriate precautions with regard to electrostatic discharge. In order to minimize risks associated with the customers applications, adequate design and operating safeguards must be provided by the customer to minimize inherent or procedural hazards. For any safety concerns, contact Freescale sales and technical support services.

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3 Kit Introduction

This LED Load Board is designed for use with all Freescale LED driver demo boards that support up to 16 channels. The board contains 256 LEDs arranged in 16 channels of 16 LEDs each. The board is connected to the driver PCB with a cable that connects only the number of channels supported by the driver demo board. For each channel, jumpers enable the number of LEDs per channel which can be configured. These jumpers also enable fault detection and allow performance to be evaluated. Push-pin connectors enable the board to be connected to any driver system.

This KIT is an LED Load Board intended for use with any LED driver.

3.1 KITLED BKLT16EVBE Features

- 16S16P LED Matrix
- Current capability up to 180mA on each channel.
- Typical LED forward voltage equal to 3.5V @ 25°C
- LED shorting jumpers for series and parallel configurations
- Versatile LED channels connections
- 2 Layers Board
- Special connector and cable for KIT34844EPEVME interface (J115)
- Terminal Block for any LED Channels configuration (J114).

4 Required Equipment

- Freescale LED driver evaluation board
- LED Load Board - KITLED BKLT16EVBE

5 EVB Setup Configuration Diagram

This configuration Diagram shows an LED Load Board configuration with “KIT34844EPEVME”

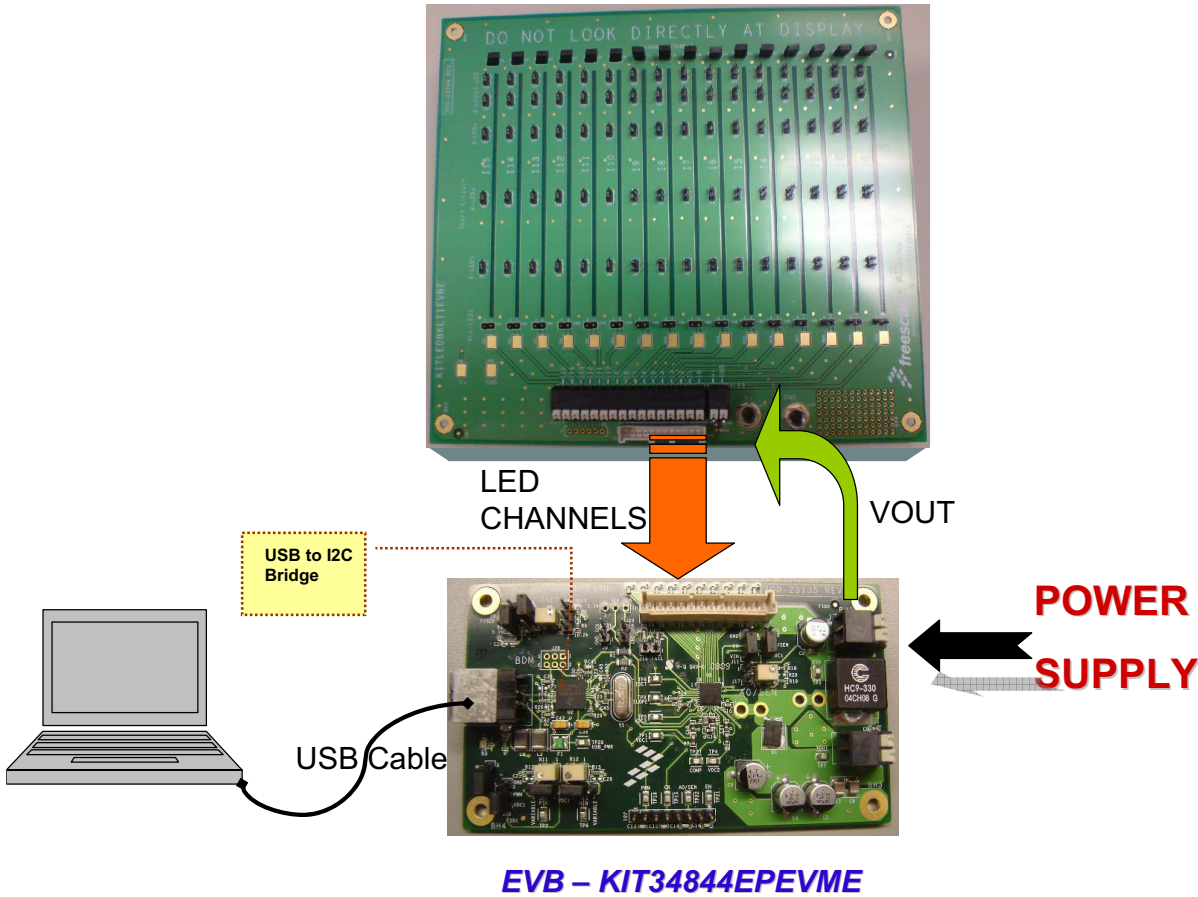


Figure 1. EVB Setup Configuration Diagram

6 EVB Schematic

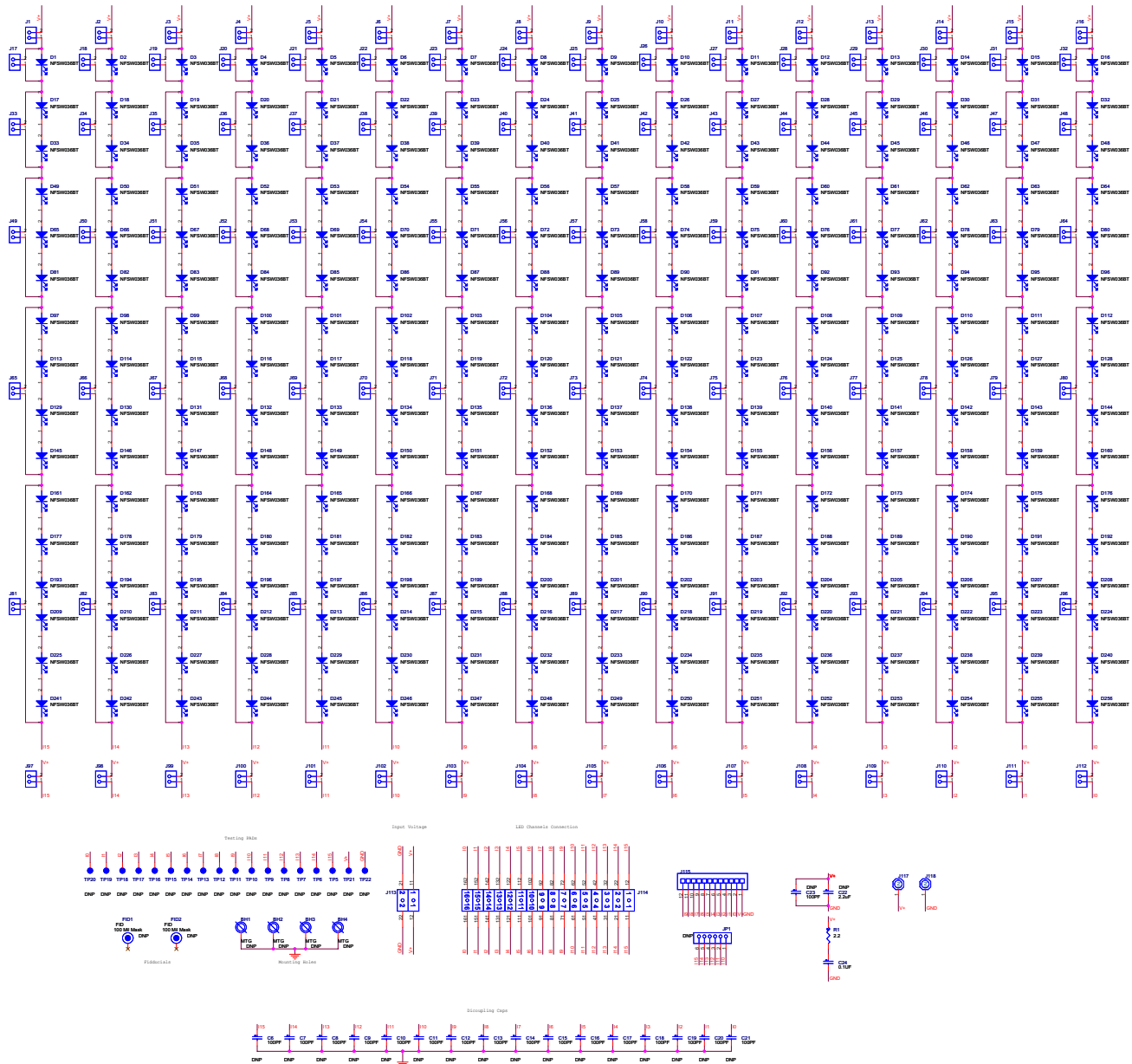


Figure 2. KITLEDBKLT16EVBE Schematic

7 Using Hardware

7.1 Jumper Connections

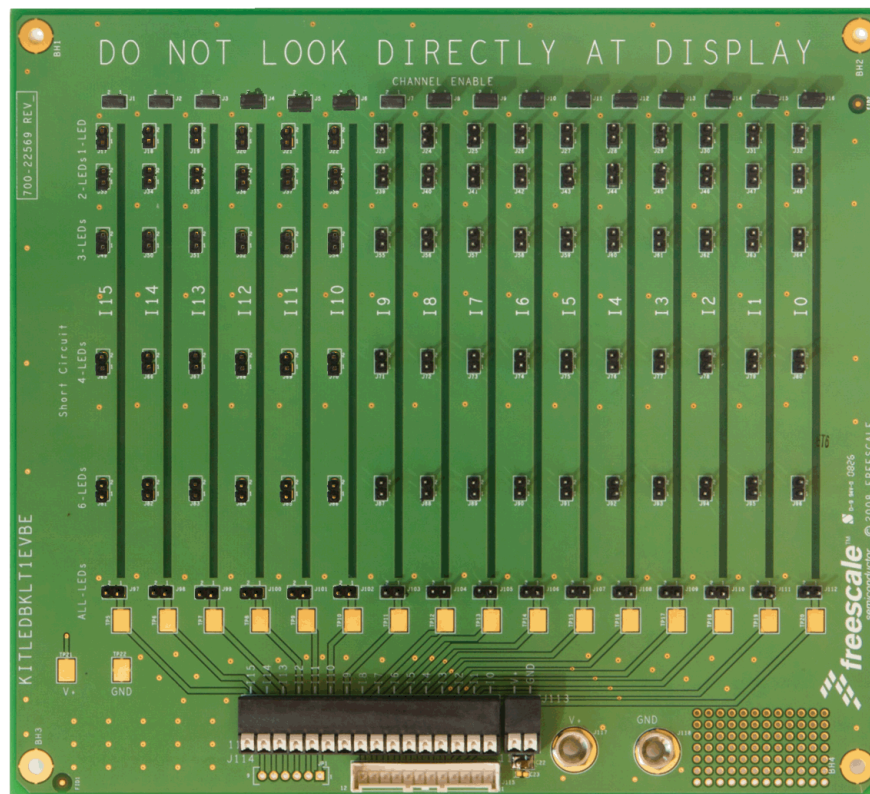


Figure 3. KITLEDCLK16EVBE Jumpers

LOCATION	REFERENCE DESIGNATOR	DESCRIPTION
Top Horizontal	J1 to J16	LED channel string enable
Bottom Horizontal	J97 to J112	It connects the Bottom of the LED channel to V+
Vertical	J17 to J96	Short Circuit LED

8 Board Layout

8.1 Assembly Layer Top (x0.75)

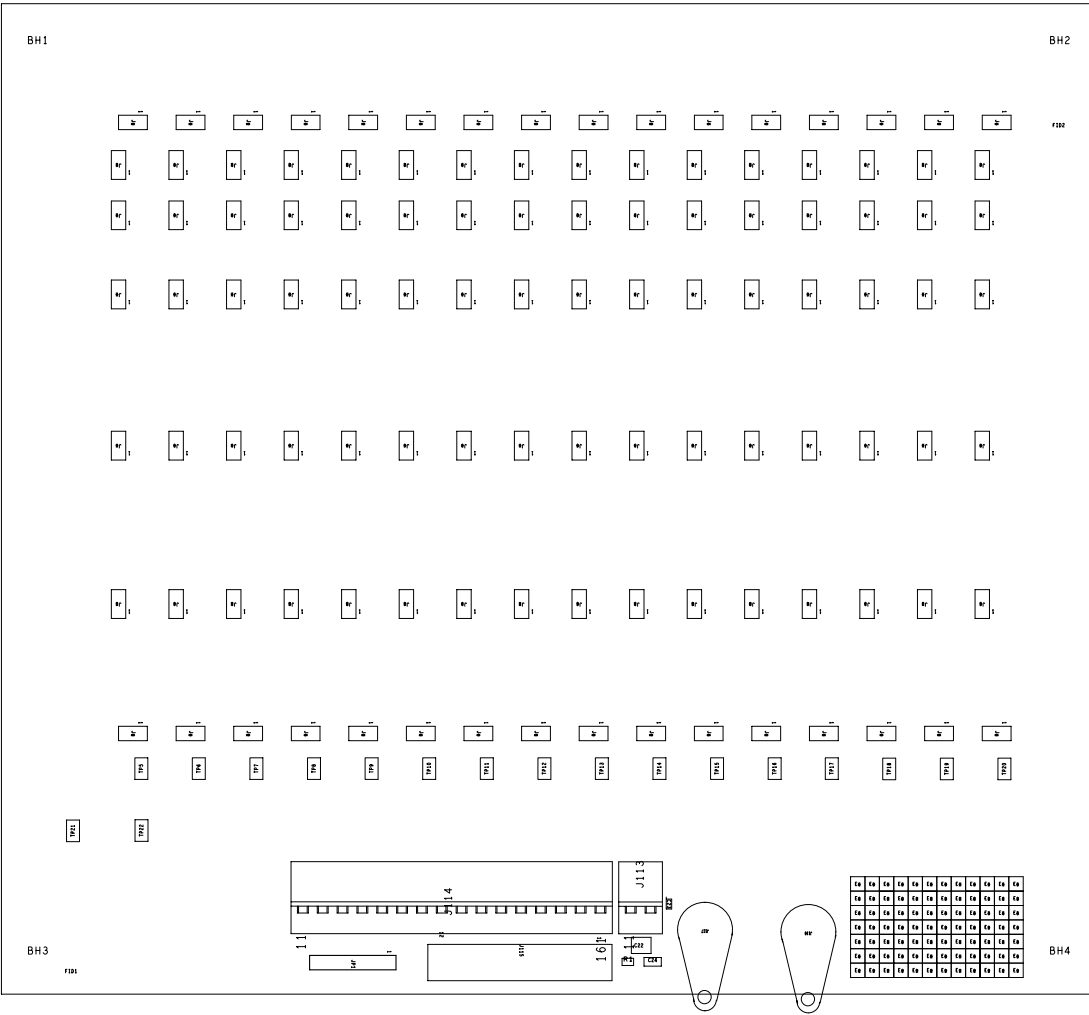


Figure 4. Assembly Layer Top

The image displays a 10x10 grid of 100 small square tiles. Each tile contains a 3x3 magic square. The tiles are arranged in 10 rows and 10 columns. Each tile has a small square in the top-left corner containing a number from 1 to 10. The numbers in the tiles are arranged in a grid that is 10 rows by 10 columns. The numbers in the tiles are arranged in a grid that is 10 rows by 10 columns. The numbers in the tiles are arranged in a grid that is 10 rows by 10 columns.

Figure 5. Assembly Layer Bottom

8.3 Top Layer Routing (x0.75)

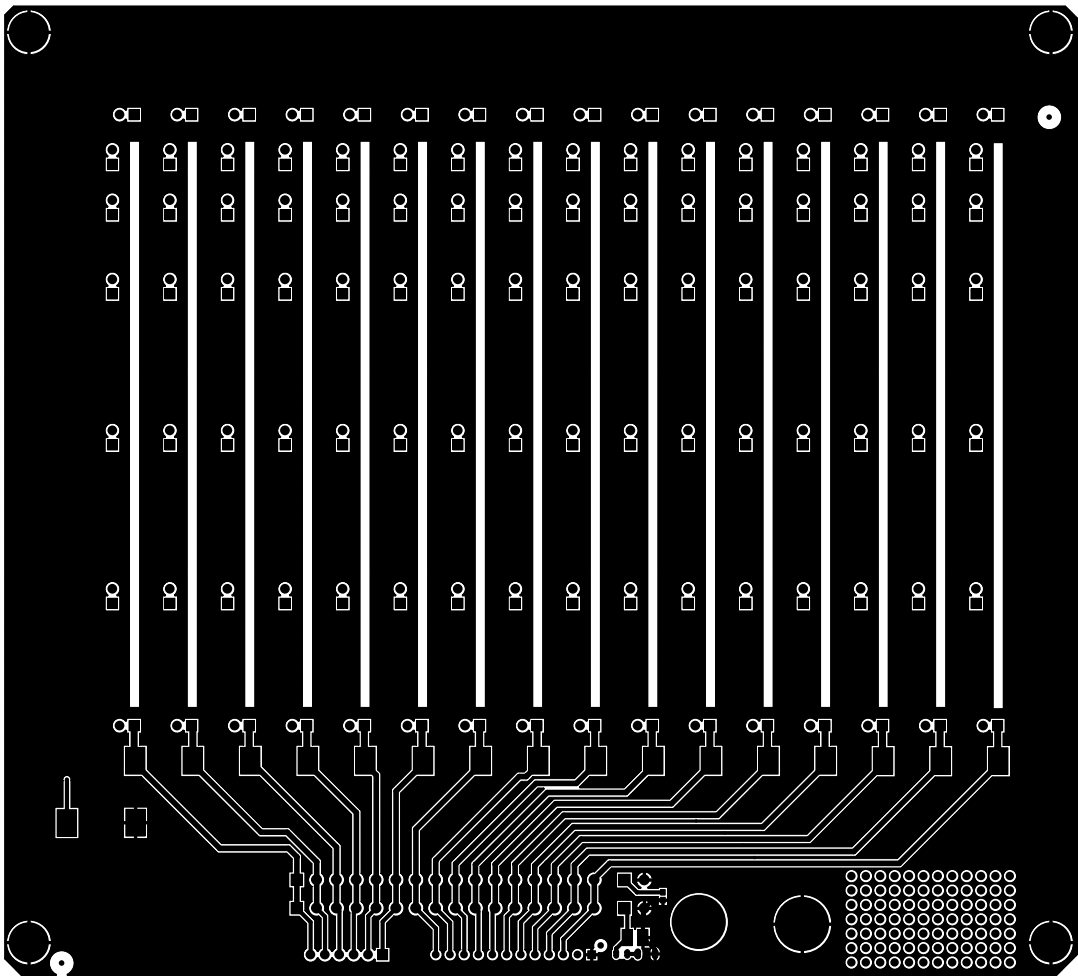


Figure 6. Top Layer Routing

8.4 Bottom Layer Routing (x0.75)

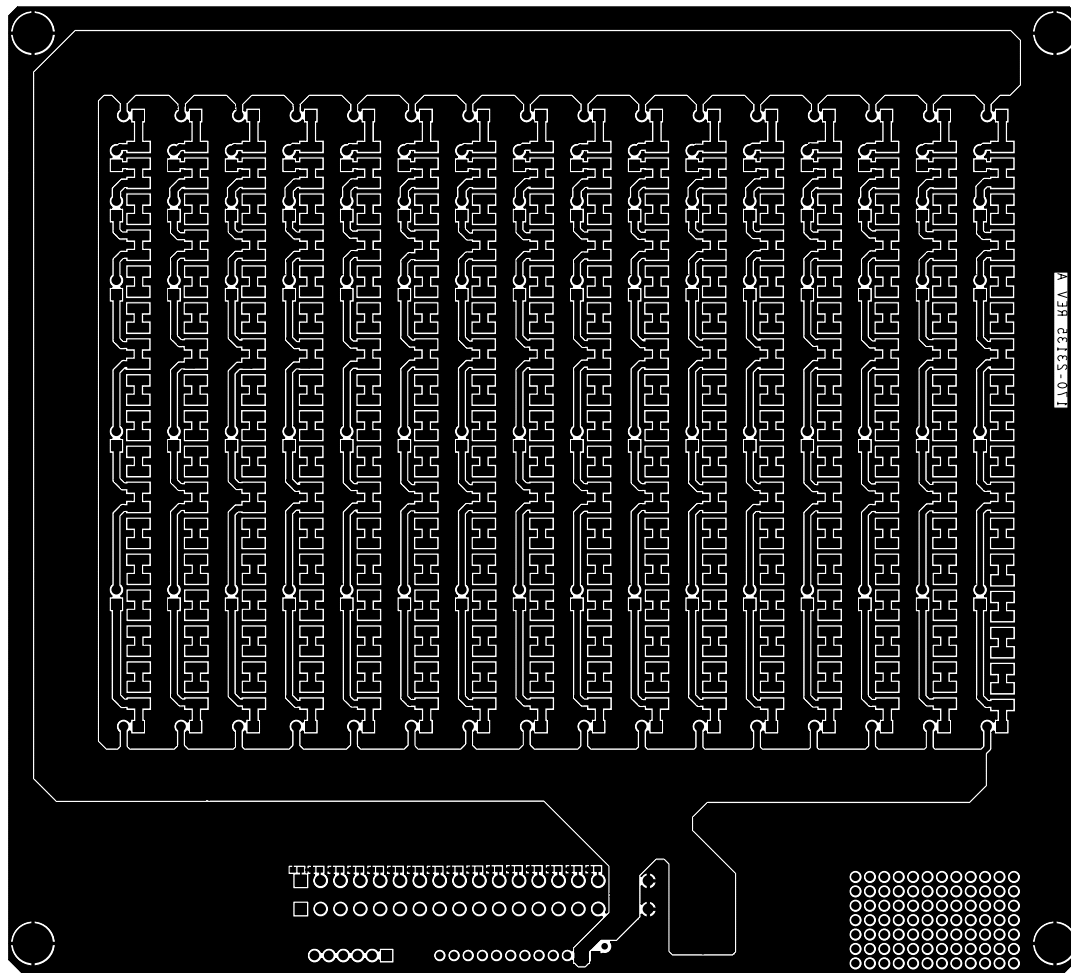


Figure 7. Bottom Layer Routing

8.5 Fabrication Drawing

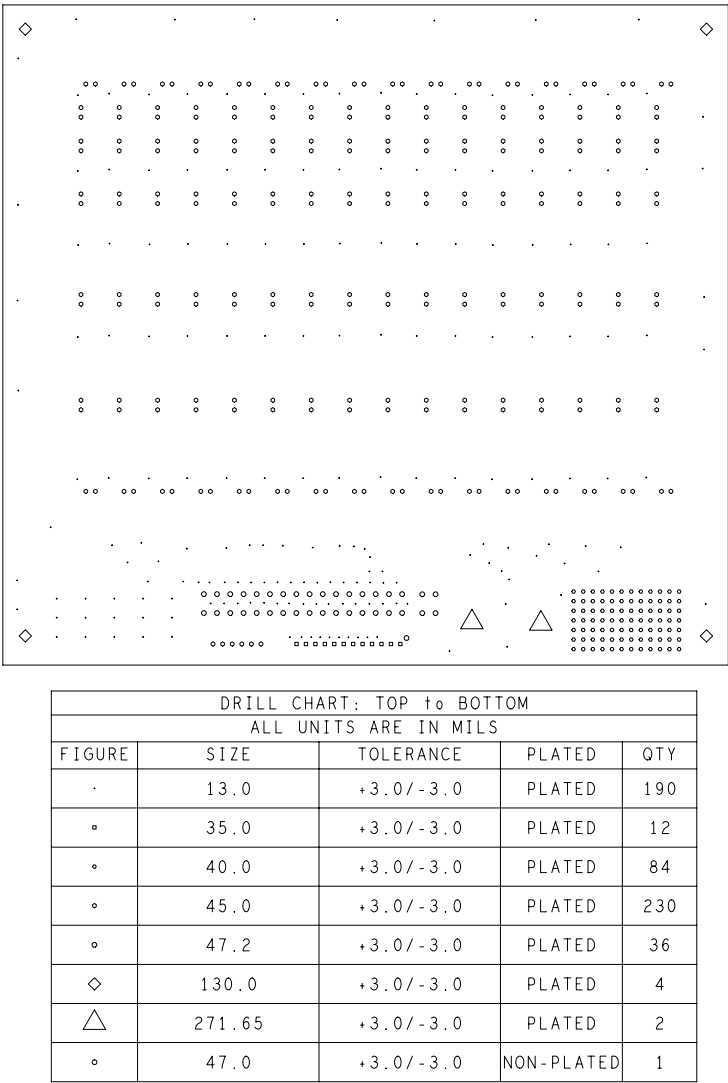


Figure 8. Fabrication Drawing

9 Bill of Material

Schematic Designator	Device	Type	Description	Manufacturer PN
Capacitors				
C24	0.1UF	CC1206_OV	CAP CER 0.1UF 100V 5% X7R 1206	C1206C104J1RACTU
Diodes - LED				
D1 - D256	NFSW036BT	LED_3p5X3p5	LED WHITE SGL 180mA 3.5V SMT	NFSW036BT
Header				
J1 - J112	HDR_1X2_M	HDR102_A	HDR 1X2 TH 100MIL SP 408H AU	5-146276-2
Terminal Block				
J113	CON_2_TB	con2x2_tb_3p5_th	CON 1X2 TB TH 3.5MM SP 508H SN	1885180000
J114	CON_16_TB	con16_tb_3p5_th	CON 1X16 TB TH 3.5MM SP 508H SN	1885320000
Connector				
J115	CON_1X12	hdr_12_xask	CON 1X12 PLUG SHRD TH 2.5MM SP 346MIL SN	B12B-XASK-1N-A
Bannana Jack				
J117 - J118	BANANA	banana_jack_6p9	CON 1 BANANA UNINSULATED TH -- 531H NI	108-0740-001
Resistors				
R1	2.2	RC0805_OV	RES MF 2.20 OHM 1/8W 1% 0805	CRL0805-FW-2R20ELF

10 References

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Freescale's LED Drivers	www.freescale.com/webapp/sps/site/taxonomy.jsp?code=LEDBLDRIVER

11 Revision History

REVISION	DATE	DESCRIPTION OF CHANGES
1.0	10/2008	Initial Release

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