

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT DC440

HIGH EFFICIENCY 3-PHASE VRM9.X POWER SUPPLY

LTC3732

DESCRIPTION

Demonstration circuit DC440 is a VRM9.x power supply for powering Intel Pentium-4 CPUs. The input voltage is 7V to 20V, the output voltage is programmed by the 5-bit VID inputs. The maximum output current is 65A. This demo board is designed to meet VRM9.0 spec. High current design for VRM9.1 can be obtained with simple

modifications of the demo board. Contact factory for details.

Design files for this circuit board are available. Call the LTC factory.

Table 1. Performance Summary

PARAMETER	CONDITION	VALUE
Minimum Input Voltage		7V
Maximum Input Voltage		20V
Maximum Output Current	≥ 100 LFM air flow for continuous operation	65A
V _{OUT} REG		VRM9.0 spec

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QUICK START PROCEDURE

Demonstration circuit DC440 is easy to set up to evaluate the performance of the LTC3732 Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

NOTE: When measuring the input or output voltage ripple, care must be taken to avoid a long ground lead on the oscilloscope probe. In this particular demo board, the output ripple voltage can be measured directly on the BNC connector **VOUT+**

1. Check the default jumper setting.

B0	B1	B2	B3	B4	FCB	5V SEL	DLC	DLC BIAS
1	1	1	1	0	CCM (0)	INT	OFF	OFF

2. With all bench supplies off, apply an input power supply with 20V/10A rating to **VIN+** and **VIN-** terminals through wires having a 10A current rating. Preset VIN at 14V.
3. Connect a 60A load to **VOUT+(J3)** and **VOUT-(J4)** terminals through wires having a 60A current rating. Preset the load to 0A.
4. Turn on the input power supply. The output voltage should read between **1.451V-1.470V.**
5. Increase the load current to **60A.** The output voltage should read between **1.394-1.413V**
6. Load Transient Test: Vin=20V.

Measure the load **change** from BNC connector LOAD STEP and the output voltage from BNC connector Vout+.

- a. Change the following jumpers to obtain an output voltage of **1.451V-1.470V** at 0A.

B0	B1	B2	B3	B4	FCB	5V SEL	DLC	DLC BIAS
1	1	1	1	0	CCM (0)	INT	OFF	OFF

- b. Apply output load current at lower level of the load step.
- c. Change Jumpers **DLC** and **DLC BIAS** to “**ON**” positions.
- d. Measure the load step change from BNC connector **LOAD STEP**. The up-slope, down-slope and step amplitude of the load change can be varied by changing **R34**, **R33** and **R38**, respectively. Every 5mV measured on the Oscilloscope is equivalent to 1A load change.
- e. Measure the output voltage from BNC connector **Vout+**.

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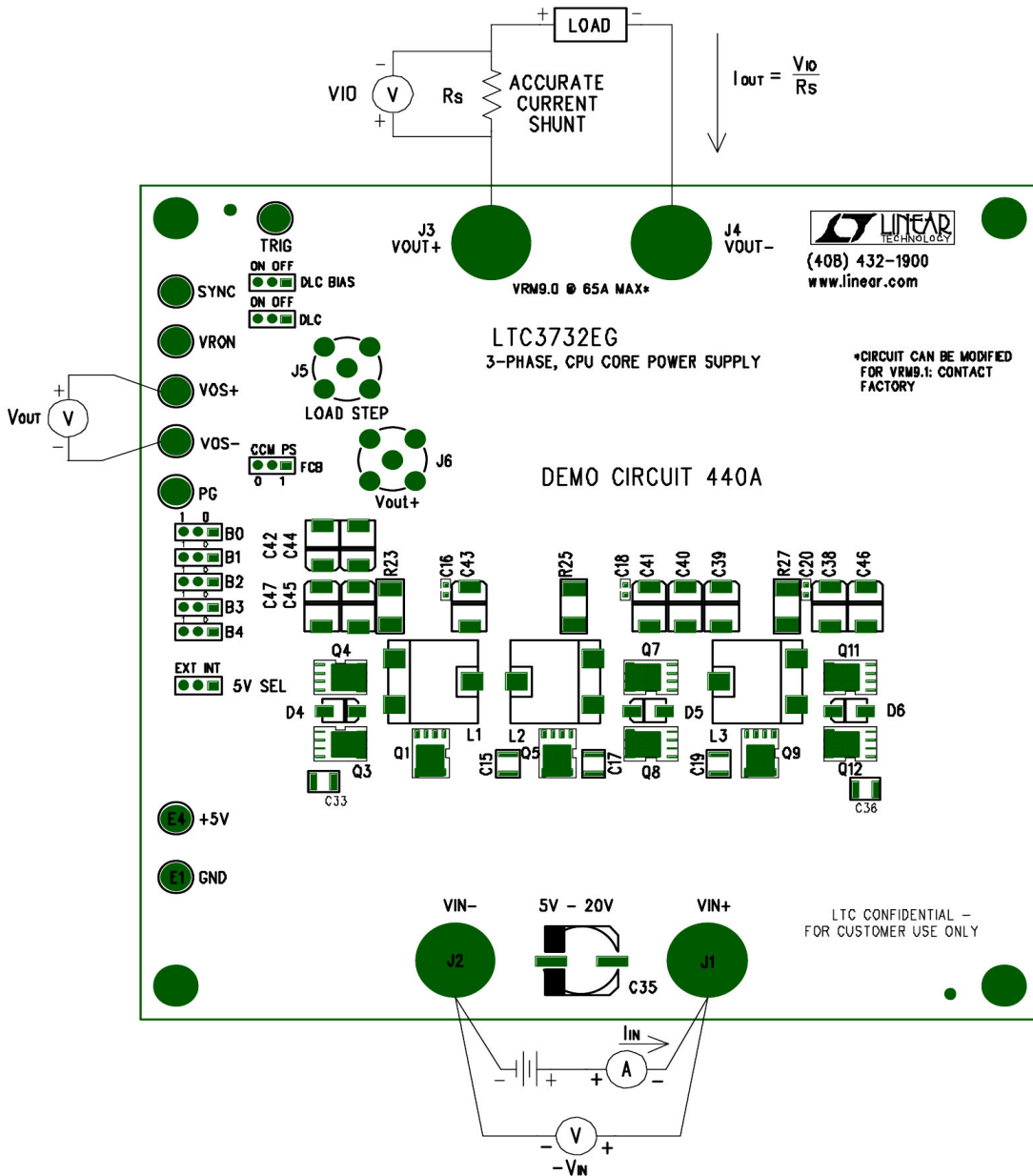
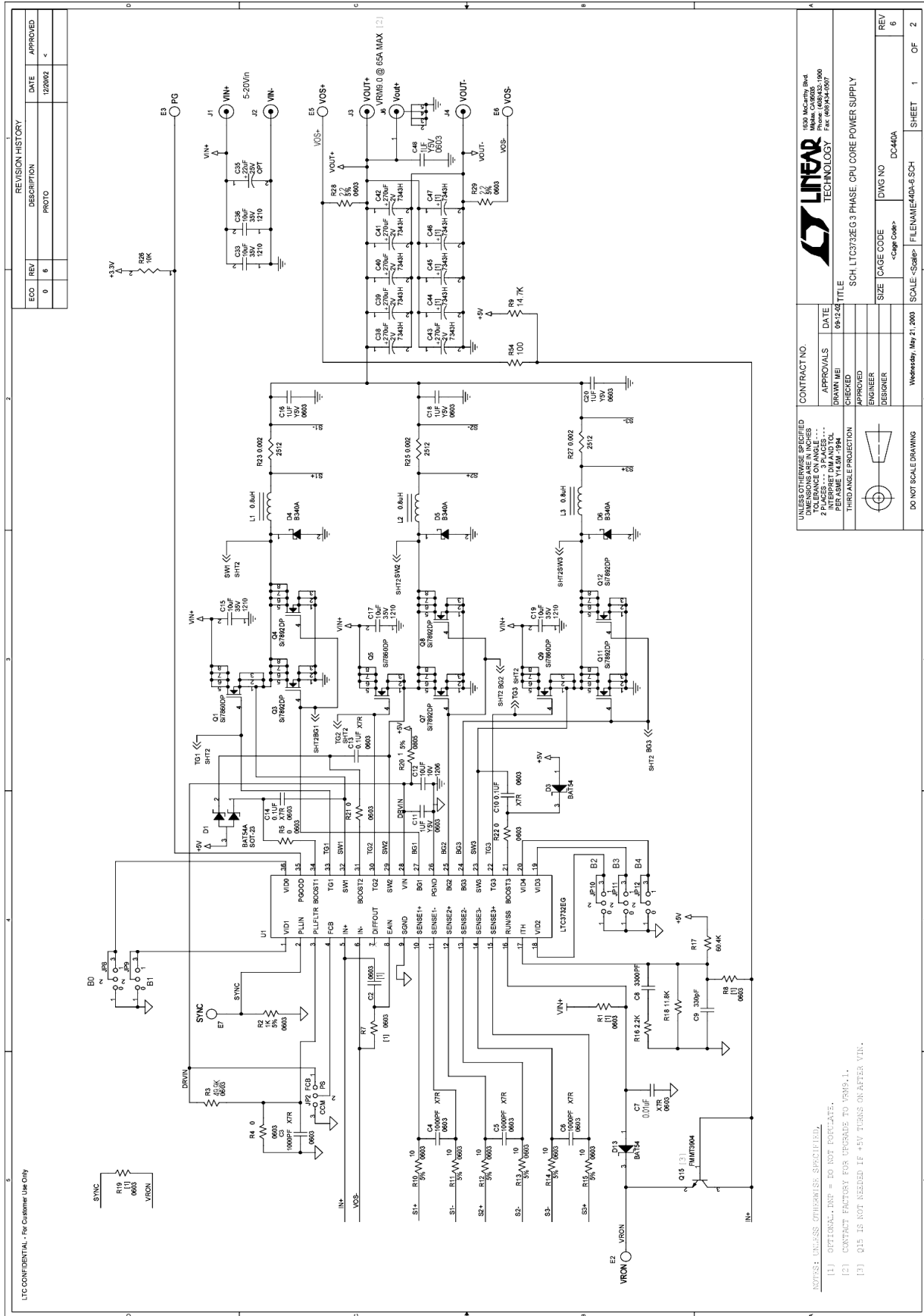


Figure 1. Proper Measurement Equipment Setup

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