

LTM4682

Low V_{OUT} Quad 31.25A or Single 125A μ Module Regulator with Digital Power System Management

General Description

The EVAL-LTM4682-A1Z evaluation board features the [LTM[®]4682](#): the wide input and output voltage range, high efficiency and power density, quad output PolyPhase[®] DC-to-DC step-down μ Module[®] (micromodule) power regulator with digital power system management (PSM). The EVAL-LTM4682-A1Z evaluation board is configured as a 4-phase four output. A similar evaluation board with a 4-phase single output is also available ([EVAL-LTM4682-A2Z](#)).

The EVAL-LTM4682-A1Z evaluation board's default input voltage range is 4.5V to 16V. However, if V_{IN} is lower than 6V and within $4.5V \leq V_{IN} \leq 5.75V$, a minor modification to certain existing on-board components is required. See step 8 ([Operation at Low \$V_{IN}\$: \$4.5V \leq V_{IN} \leq 5.75V\$](#)) in the [Procedure](#) section.

The factory default output voltage V_{OUT} [0:3] is 0.7V at 31.25A maximum load current per channel. Each channel can deliver up to 31.25A maximum load current, but forced airflow and heatsink might also be used to further optimize the output power when all output rails are on and fully loaded. The evaluation board output voltages can be adjusted from 0.7V up to 1.35V. Refer to the [LTM4682](#) data sheet for thermal derating curves and recommended switching frequency when adjusting the output voltage.

The factory default switching frequency is preset at 575kHz (typical). The EVAL-LTM4682-A1Z evaluation board comes with a PMBus interface and digital PSM functions. An on-board 12-pin connector is available for the users to connect the dongle DC1613A to the evaluation board, which provides an easy way to communicate and program the part using the LTpowerPlay[®] software development tool.

The LTpowerPlay software and the I²C/PMBus/SMBus dongle DC1613A allow the users to monitor real-time telemetry of input and output voltages, input, and output current, switching frequency, internal IC die temperatures, external power component temperatures, and fault logs. Programmable parameters include device address, output voltages, control loop compensation, switching frequency, phase interleaving, discontinuous-conduction mode (DCM) or continuous-conduction mode (CCM) of operation, digital soft start, sequencing, and time-based shutdown, fault responses to input and output overvoltage, output overcurrent, IC die and power component over temperatures.

The LTM4682 is available in a thermally enhanced, low-profile 330-pin (15mm × 22mm × 5.71mm) BGA package. It is recommended to read the LTM4682 data sheet and this user guide prior to using or making any hardware changes to the EVAL-LTM4682-A1Z evaluation board.

[Ordering Information](#) appears at end of data sheet.

Evaluation Board Photo



Figure 1. EVAL-LTM4682-A1Z Evaluation Board (Part Marking is either ink Mark or Laser Mark)

Performance Summary

Specifications are at $T_A = 25^\circ\text{C}$

PARAMETER	CONDITIONS		MIN	TYP	MAX	UNIT
Input voltage V_{IN} range			4.5	12	14	V
Evaluation board default output voltage, $V_{OUT0-OUT3}$	$f_{SW} = 575\text{kHz}$, $V_{IN} = 4.5\text{V to } 14\text{V}$, $I_{OUT} = 0\text{A to } 31.25\text{A per channel}$.		0.697	0.7	0.704	V
Switching frequency, f_{SW}	Factory default switching frequency.			575		kHz
Maximum continuous output current per channel, $I_{OUT0-OUT3}$				30	31.25	A
Efficiency	$f_{SW} = 575\text{kHz}$, $V_{IN} = 12\text{V}$, $V_{OUT0} = 0.7\text{V}$, $I_{OUT0} = 0\text{A to } 31.25\text{A}$, $V_{BIAS} = 5.5\text{V}$ (RUNP: ON), only one channel is on at a time, no forced airflow, no heatsink	$I_{OUT0} = 20\text{A}$		86.7		%
		$I_{OUT0} = 31.25\text{A}$		85		%
Thermal performance	$f_{SW} = 575\text{kHz}$, $V_{IN} = 12\text{V}$, $V_{OUT0-3} = 0.7\text{V}$, $I_{OUT0-OUT3} = 31.25\text{A per channel}$, $V_{BIAS} = 5.5\text{V}$ (RUNP: ON), no forced airflow, no heatsink.			97.4		$^\circ\text{C}$

Features and Benefits

- Quad digitally adjustable analog loops with a digital interface for control and monitoring.
- Optimized for low output voltage ranges and fast load transient response.
- 15mm × 22mm × 5.71mm Ball grid array (BGA) package.

EVAL-LTM4682-A1Z Evaluation Board

FILE	DESCRIPTION
EVAL-LTM4682-A1Z	Design files.
LTpowerPlay	Easy-to-use Windows® based graphical user interface (GUI) development tool.
DC1613A	The USB to PMBus controller dongle.

Quick Start

Required Equipment

- One power supply that can deliver 20V at 20A.
- Four electronic loads that can deliver 35A at 0.7V each load.
- Five digital multimeters (DMMs).

Procedure

The EVAL-LTM4682-A1Z evaluation board is easy to set up to evaluate the performance of the LTM4682. See [Figure 2](#) for proper measurement equipment setup and use the following test procedures.

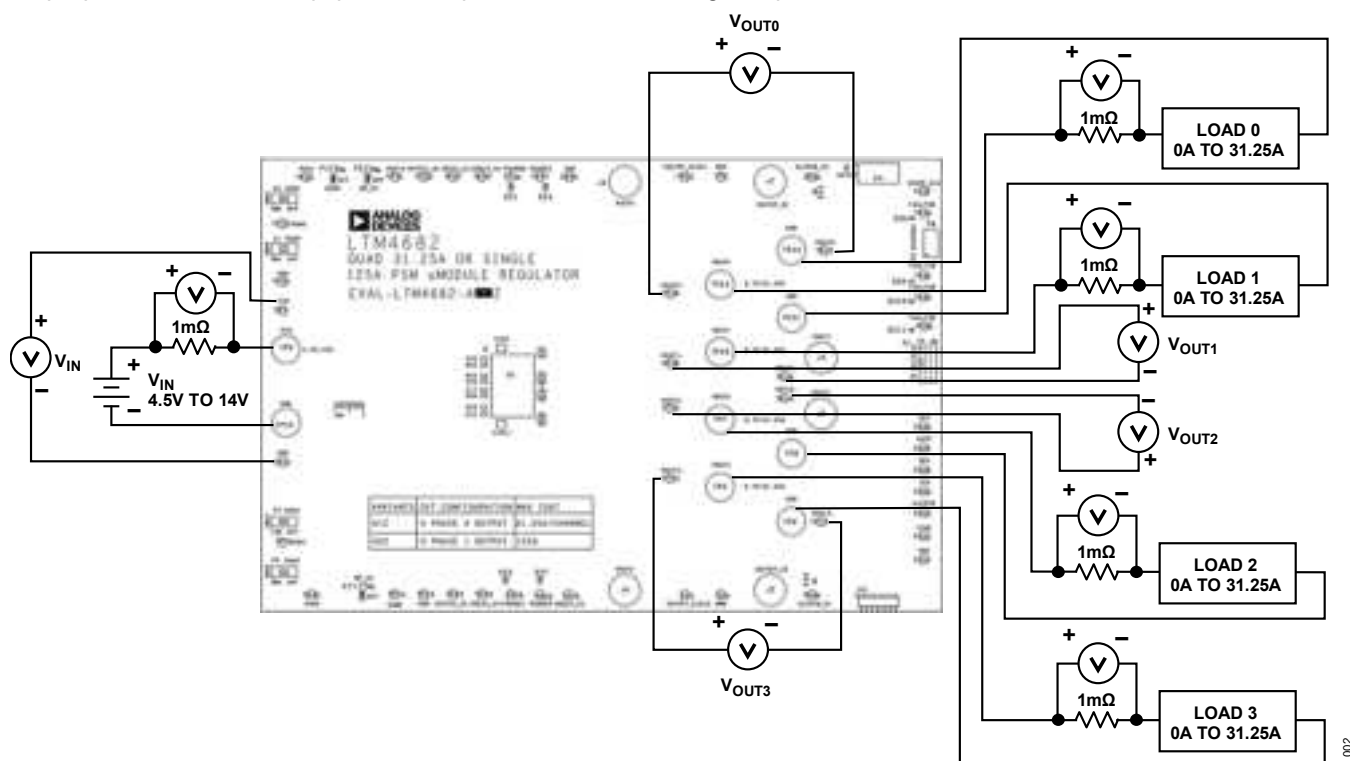


Figure 2. Proper Measurement Equipment Setup

1. With power off, connect the input power supply between VIN (TP9) and GND (TP10). Set the input voltage supply to 0V.
2. Connect the first load between VOUT0 (TP23) and GND (TP24), connect the second load between VOUT1 (TP20) and GND (TP21), connect the third load between VOUT2 (TP7) and GND (TP8), connect the fourth load between VOUT3 (TP5) and GND (TP6). Preset all the loads to 0A.
3. Connect the DMM between the input test points: VIN (TP1) and GND (TP11) to monitor the input voltage. Connect DMMs between VOUT0+ (TP16) and VOUT0- (TP17), VOUT1+ (TP18) and VOUT1- (TP19), VOUT2+ (TP12) and VOUT2- (TP14), VOUT3+ (TP13) and VOUT3- (TP15) to monitor the corresponding DC output voltages of Channel 0, Channel 1, Channel 2, and Channel 3. These output voltage test points are Kelvin sensed directly across COUT2 (Channel 0), COUT10 (Channel 1), COUT20 (Channel 2), and COUT29 (Channel 3) to provide an accurate measurement of output voltages. Do not apply load current to any of the above test points to avoid damage to the regulator. Do not connect the scope probe ground leads to VOUT0-, VOUT1-, VOUT2-, and VOUT3-.

4. Prior to powering up the EVAL-LTM4682-A1Z, check the default position of the jumpers and switches in the following positions.

SWITCH/JUMPER	SWR0, SWR1 SWR2, SWR3	P1	P2 P17
DESCRIPTION	RUN0, RUN1 RUN2, RUN3	RUNP	WP_01 WP_23
POSITION	OFF	ON	OFF

5. Turn on the power supply at the input. Slowly increasing the input voltage from 0V to 12V (typical). Measure and ensure the input supply voltage is 12V and flip SWR0 (RUN0) and SWR1 (RUN1), SWR2 (RUN2), and SWR3 (RUN3) to the ON position. The output voltages should be $0.7V \pm 0.5\%$ (typical) for VOUT0, VOUT1, VOUT2, and VOUT3.
6. Once the input and output voltages are properly established, adjust the input voltage between 6V to 14V max and the load current within the operating range of 0A to 31.25A max per channel. Observe the output voltage regulation, output voltage ripples, switching node waveform, load transient response, and other parameters. See [Figure 3](#) for proper output voltage ripple measurement.

To measure the input/output voltage ripples properly, do not use the long ground lead on the oscilloscope probe. See [Figure 3](#) for the proper scope probe technique. Short, stiff leads need to be soldered to the (+) and (–) terminals of an input or output capacitor. The probe's ground ring needs to touch the (–) lead, and the probe tip needs to touch the (+) lead.

The output voltage ripples of Channel 0, Channel 1, Channel 2, and Channel 3 can also be monitored using on-board BNC terminals. Connect short BNC cables from VOUT0 (J3), VOUT1 (J4), VOUT2 (J5), and VOUT3 (J6) to the inputs of a 4-channel oscilloscope (scope probe ratio 1:1, AC-coupling) to observe output voltage ripples.

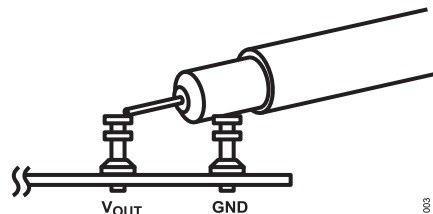


Figure 3. Scope Probe Placement for Measuring Output Ripple Voltage

(Option) Operation with V_{BIAS}

7. The V_{BIAS} pin is the 5.5V output of an internal buck regulator that can be enabled or disabled with RUNP. The V_{BIAS} regulator input is the V_{IN_VBIAS} pin and is powered by V_{IN}. The advantage of using V_{BIAS} is bypassing the internal INTV_{CC_LDO} powered from V_{IN}, turning on the internal switch connected to the 5.5V V_{BIAS} to INTV_{CC_01} and INTV_{CC_23} of the part, therefore, reducing the power loss, improving the overall efficiency, and lowering the temperature rise of the part when operating at high V_{IN} and high switching frequency. The V_{BIAS} must exceed 4.8V, and the V_{IN} must be greater than 7V to activate the internal switch connecting V_{BIAS} to INTV_{CC_01} and INTV_{CC_23} of the part. In typical applications, it is recommended that V_{BIAS} is enabled.

Operation at Low V_{IN}: 4.5V ≤ V_{IN} ≤ 5.75V

8. Remove R31 to disconnect V_{IN_VBIAS} from V_{IN}. Remove C25. Set RUNP (P1) to the OFF position. Tie SV_{IN_01} to INTV_{CC_01} by stuffing R142 with a 0Ω resistor. Tie SV_{IN_23} to INTV_{CC_23} by stuffing R143 with a 0Ω resistor. Make sure V_{IN} is within 4.5V ≤ V_{IN} ≤ 5.75V. Additional input electrolytic capacitors may be installed between V_{IN} (TP9) and GND (TP10) to prevent V_{IN} from drooping or overshoot to a voltage level that can exceed the specified minimum V_{IN} (4.5V) and maximum V_{IN} (5.75V) during large output load transient.

(Option) On-Board Load Step Circuit

9. The EVAL-LTM4682-A1Z evaluation board provides an on-board load transient circuit to measure ΔV_{OUT} peak-to-peak deviation during rising or falling dynamic load transient. The simple load step circuit consists of two paralleled 40V N-channel power MOSFETs in series with two paralleled 10m Ω , 2W, 1% current sense resistors. The MOSFETs are configured as voltage control current source (V_{CCS}) devices; therefore, the output current step and its magnitude are created and controlled by adjusting the amplitude of the applied input voltage step at the gate of the MOSFETs. A function generator provides a voltage pulse between IOSTEP_CLK01 (TP22) and GND (TP2). The input voltage pulse should be set at a pulse width of less than 300 μ s and a maximum duty cycle of less than 2% to avoid excessive thermal stress on the MOSFET devices. The output current step is measured directly across the current sense resistors and monitored by connecting the BNC cable from IOSTEP_01 (J1) to the oscilloscope's input (scope probe ratio 1:1, DC-coupling). The equivalent voltage to the current scale is 5mV/1A. The load step current slew rate di/dt can be varied by adjusting the rise time and fall time of the input voltage pulse. The load step circuit of Channel 0 or Channel 1 is connected to VOUT0 by default but can be used for VOUT1 by simply removing the 0 Ω jumper R92 and stuffing it at the position of R93 and vice versa. Only one resistor, R92 or R93, can be stuffed at a time to avoid shorting VOUT0 and VOUT1 together. Repeat step 9 to perform load step transient evaluation for the VOUT1 rail. Similarly, load step transient evaluation of VOUT2 or VOUT3 can be performed using the same method described above. See the [Schematics](#) section for more details.

Connecting a PC to the EVAL-LTM4682-A1Z

Use a PC to reconfigure the digital power system management (PSM) features of the LTM4682, such as nominal V_{OUT} , margin set points, overvoltage/undervoltage limits, output current and temperature fault limits, sequencing parameters, the fault logs, fault responses, GPIOs, and other functionality. The DC1613A dongle can be hot-plugged when V_{IN} is present. See [Figure 4](#) for the proper setup of the evaluation board.

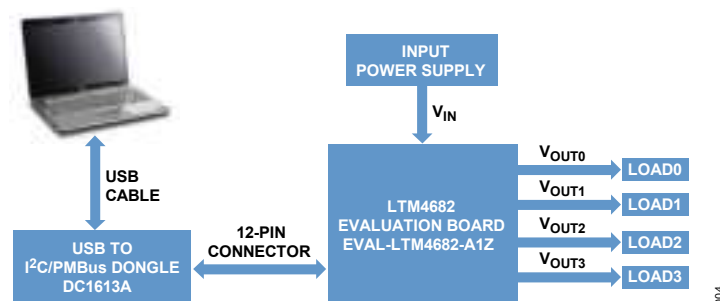


Figure 4. EVAL-LTM4682-A1Z Evaluation Board Setup with a PC

LTpowerPlay Quick Start Guide

The LTpowerPlay is a powerful Windows-based development environment that supports Analog Devices digital power system management (PSM) ICs. The software supports a variety of different tasks. Use the LTpowerPlay to evaluate Analog Devices digital PSM μ Module devices by connecting to an evaluation board system.

The LTpowerPlay can also be used in an offline mode (with no hardware present) to build a multichip configuration file that can be saved and reloaded anytime.

The LTpowerPlay provides unprecedented diagnostic tools and debug features. It becomes a valuable diagnostic tool during board bring-up to program or tweak the power management scheme in a system, or to diagnose power issues when bringing up rails.

The LTpowerPlay utilizes the DC1613A, USB-to-PMBus controller, to communicate with one of the many potential targets, including all the parts in the PSM product category evaluation system. The software also provides an automatic update feature to keep it current with the latest set of device drivers and documentation. Download and install the LTpowerPlay software at [LTpowerPlay](#).

To access technical support documents for Analog Devices digital PSM products, visit the LTpowerPlay Help menu. Online help is also available through the LTpowerPlay interface.

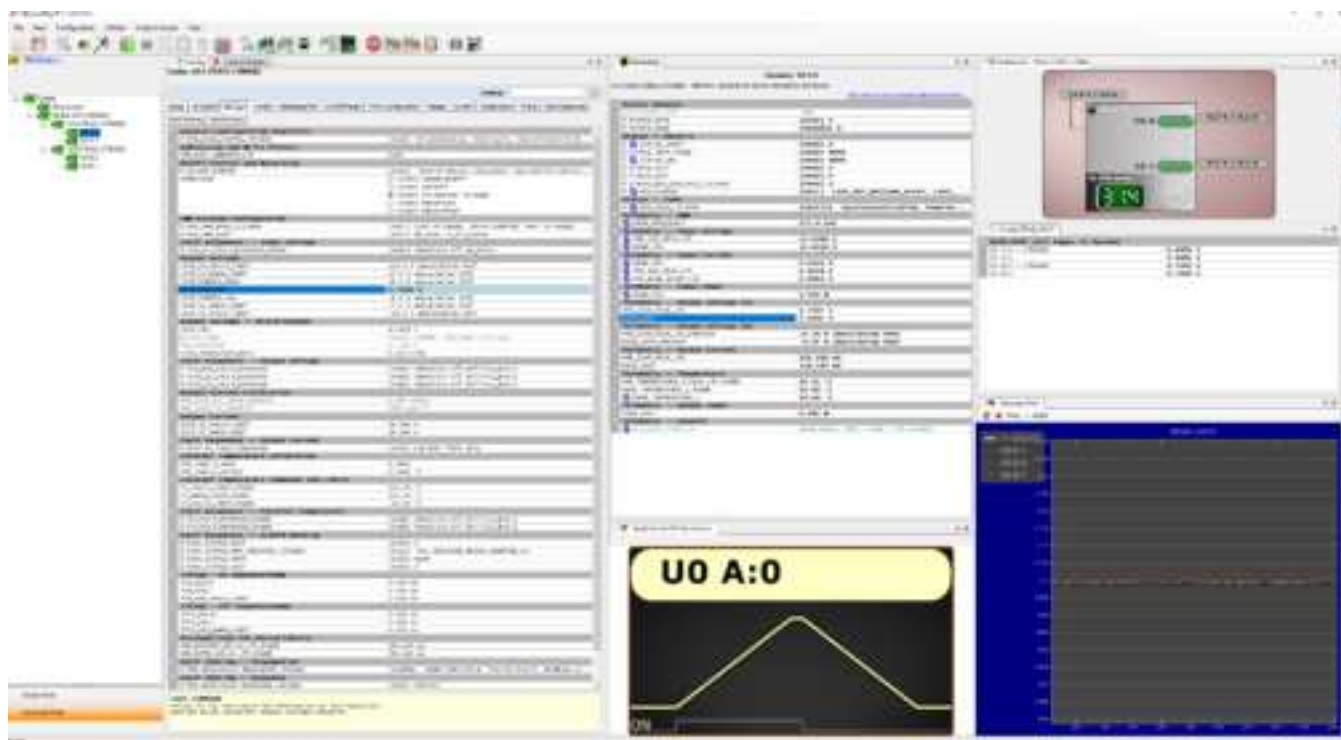


Figure 5. LTpowerPlay Main Interface

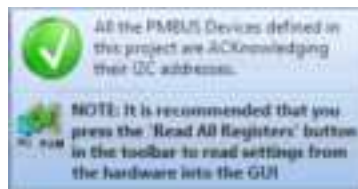
LTpowerPlay Procedure

Use the following procedure to monitor and change the settings for the LTM4682.

1. Launch the LTpowerPlay GUI. The GUI should automatically identify the EVAL-LTM4682-A1Z (see the following system tree).



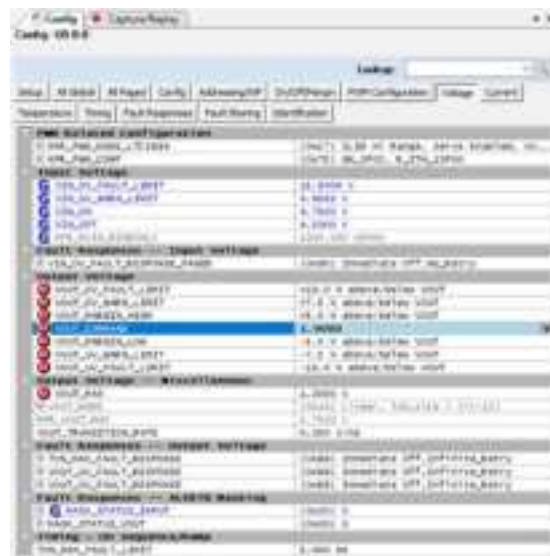
2. A green message box shows for a few seconds in the lower left-hand corner, confirming that LTM4682 is communicating.



3. In the Toolbar, **Click the R (RAM to PC)** icon to read the RAM from the LTM4682. The configuration is read from the LTM4682 and loaded into the GUI.



4. Example of programming the output voltage to a different value. In the Config Tab, **Click on the Voltage** tab in the main menu bar, and **type in 1V** in the VOUT_COMMAND box as shown in the following figure.



5. Then, **Click the W** (PC to RAM) icon to write these register values to the LTM4682.



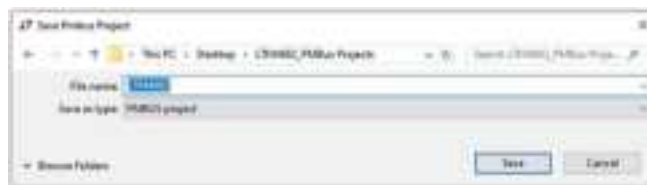
6. The output voltage will change to 1V. If the write command is successfully executed, the following message should be seen.



7. All user configurations or changes can be saved in to the NVM. In the Toolbar, **Click the RAM to NVM** icon.



8. Save the evaluation board configuration to a (*.proj) file. **Click the Save icon** and save the file with a preferred file name.



Typical Performance Characteristics

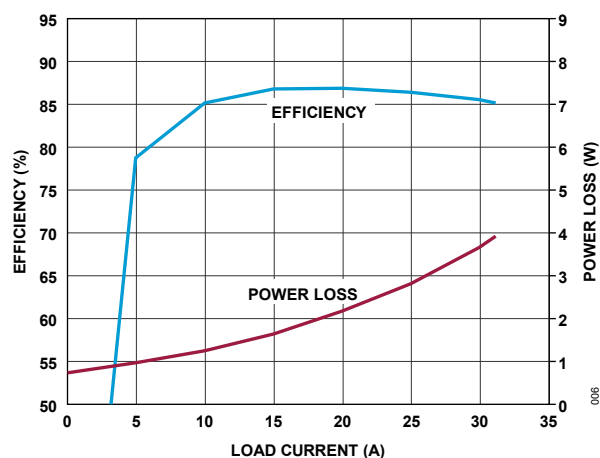


Figure 6. Efficiency vs. Load Current, $V_{OUT} = 0.7V$, $I_{LOAD} = 31.25A$, $V_{BIAS} = 5.5V$ (RUNP: ON), $f_{SW} = 575kHz$, SWR0: ON, SWR (1,2,3) OFF, V_{IN} and V_{OUT} Measured across C_{IN7} and C_{OUT1} , $T_A = 25^\circ C$, No Forced Airflow, No Heatsink

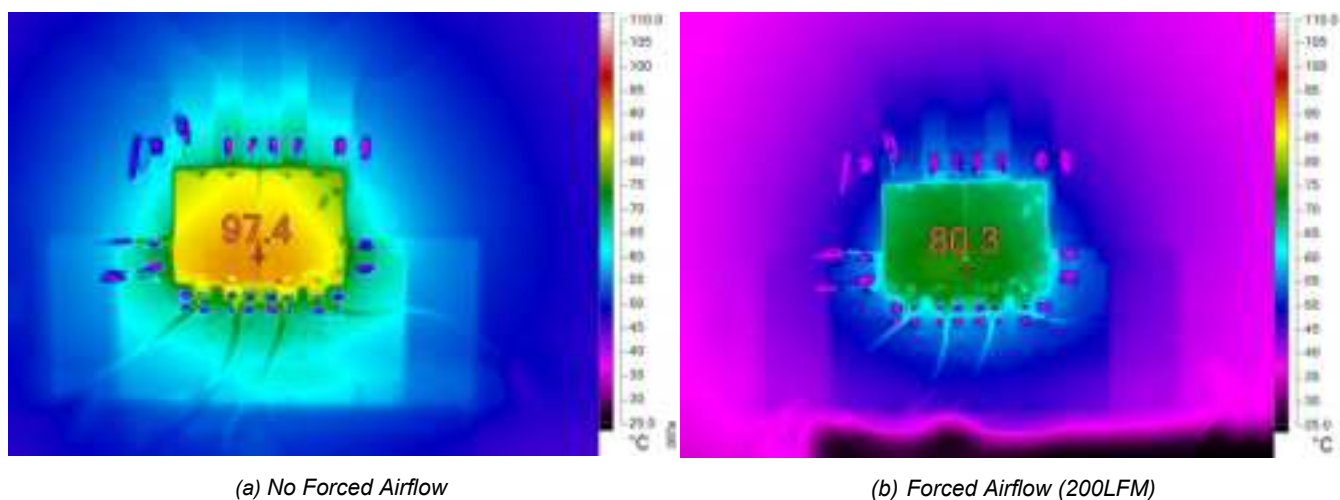


Figure 7. Thermal Performance, $V_{OUT} = 0.7V$, $I_{LOAD} = 31.25A$ per Channel, $V_{BIAS} = 5.5V$ (RUNP: ON), $f_{SW} = 575kHz$, $T_A = 25^\circ C$, No Heatsink

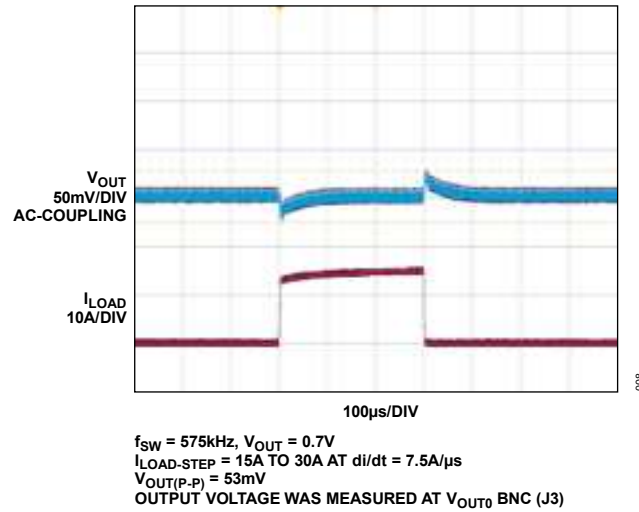


Figure 8. Load Transient Response

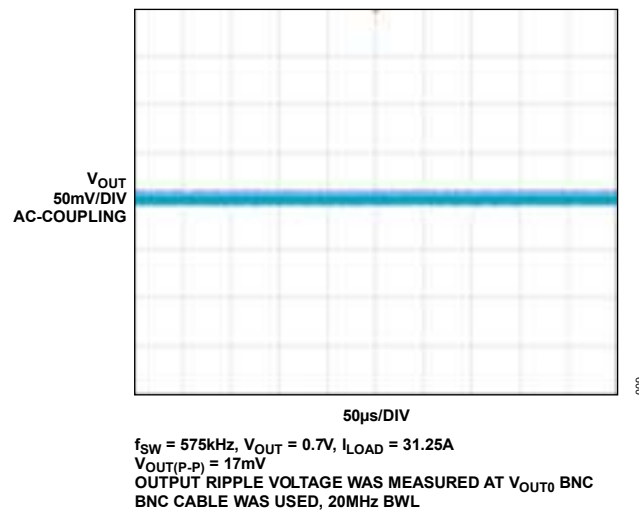


Figure 9. Output Ripple Voltage

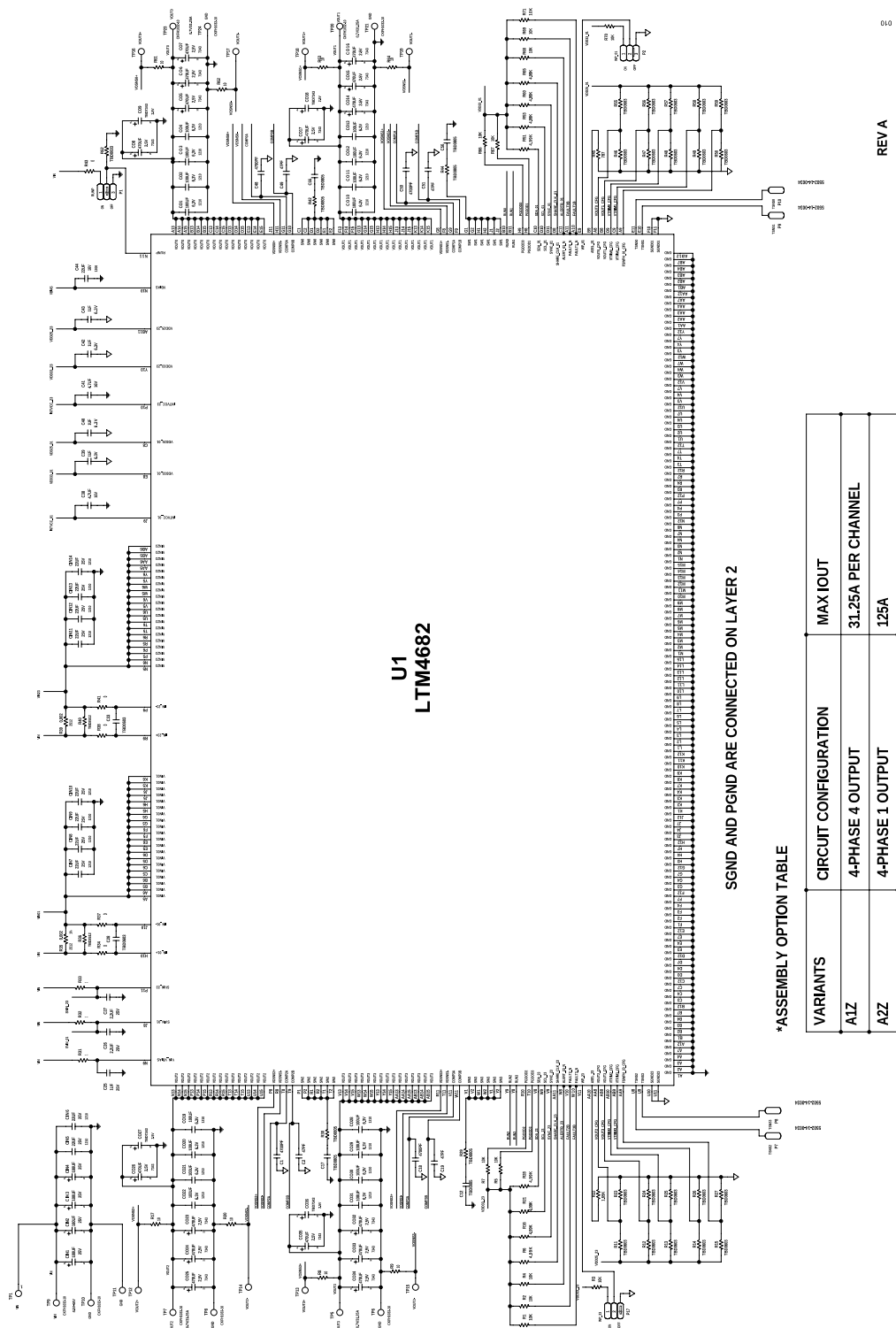
EVAL-LTM4682-A1Z Evaluation Board Bill of Materials

QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
Required Circuit Components			
4	C1, C18, C48, C50	CAP. CER 4700pF 50V 10% X7R 0603	YAGEO, CC0603KRX7R9BB472
4	C12, C17, C55, C56	DO NOT INSTALL	TBD, TBD0805
1	C14	CAP. CER 0.1μF 16V 10% X7R 0603	KEMET, C0603C104K4RAC
4	C2, C19, C49, C51	CAP. CER 47PF 50V 5% C0G 0603 AEC-Q200	TDK, CGA3E2C0G1H470J080AA
1	C25	CAP. CER 1μF 25V 10% X7R 0603	WURTH ELEKTRONIK, 885012206076
2	C26, C27	CAP. CER 2.2μF 25V 10% X5R 0603	MURATA, GRM188R61E225KA12D
2	C28, C33	DO NOT INSTALL	TBD, TBD0603
2	C38, C41	CAP. CER 4.7μF 16V 10% X6S 0603	MURATA, GRM188C81C475KE11D
4	C39, C40, C42, C43	CAP. CER 1μF 6.3V 20% X5R 0603	AVX CORPORATION, 06036D105MAT2A
1	C44	CAP. CER 22μF 16V 10% X5R 1206	AVX CORPORATION, 1206YD226KAT2A
2	C65, C66	CAP. CER 100μF 6.3V 10% X5R 1206	MURATA, GRM31CR60J107KE39L
21	C67–C70, CO1–CO4, CO10–CO13, CO19–CO22, CO28–CO31, CO37	CAP. CER 100μF 6.3V 20% X7S 1210	MURATA, GRM32EC70J107ME15L
12	C71–C82	CAP. CER 0.1μF 16V 20% X7R 0603	VISHAY, VJ0603Y104MXJAP
4	C84–C87	CAP. FILM 0.1μF 16V 20% 0805	PANASONIC, ECP-U1C104MA5
4	C88–C91	CAP. CER 0.01μF 25V 5% C0G 0603 EXTREME LOW ESR	KEMET, C0603C103J3GACTU
4	CIN1–CIN4	CAP. ALUM POLY 180μF 25V 20% 8mm × 11.9mm 0.016Ω 4650mA 5000h	PANASONIC, 25SVPF180M
10	CIN5–CIN14	CAP. CER 22μF 25V 10% X7R 1210	SAMSUNG, CL32B226KAJNNNE
16	CO5–CO8, CO14–CO17, CO23–CO26, CO32–CO35	CAP. ALUM POLY 470μF 2.5V 20% 2917	PANASONIC, EEFGX0E471R
2	D1, D2	DIODE SCHOTTKY BARRIER RECTIFIER	NEXPERIA, PMEG2005AEL, 315
4	D3–D6	DO NOT INSTALL	DIODES INCORPORATED, TBD SOD323
4	DS1, DS3, DS5, DS7	LED GREEN WATER CLEAR 0603	WÜRTH ELEKTRONIK, 150060GS75000
6	DS4, DS6, DS8–DS11	LED SMD 0603 COLOR RED AEC-Q101	VISHAY, TLMS1100-GS15
6	J1–J6	CONN-PCB BNC JACK ST 50Ω	AMPHENOL CONNEX, 112404
3	P1, P2, P17	CONN-PCB 3-POS MALE HDR UNSHROUDED SINGLE ROW, 2mm PITCH, 3.60mm POST HEIGHT, 2.80mm SOLDER TAIL	SULLINS, NRPN031PAEN-RC
4	P7–P10	DO NOT INSTALL (TBD) CONN-PCB INVISIPIN 0.64mm × 0.64mm STANDARD PIN	R&D INTERCONNECT SOLUTIONS, TBD

QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
1	P3	CONN-PCB 12-POS SHROUDER HDR, 2mm PITCH, 4mm POST HEIGHT, 2.5mm SOLDER TAIL	AMPHENOL, 98414-G06-12ULF
1	P4	CONN-PCB 14-POS FEMALE HRD RA 2mm PITCH, 3mm SOLDER TAIL	SULLINS, NPPN072FJFN-RC
1	P5	CONN-PCB HDR 14POS 2.0mm GOLD 14mm × 4.3mm TH	MOLEX, 877601416
1	P6	CONN-PCB 4-POS SHROUDED HDR MALE 2mm PITCH	HIROSE ELECTRIC CO., DF3A-4P-2DSA
4	Q1–Q4	TRAN N-CH MOSFET 40V 14A	VISHAY, SUD50N04-8M8P-4GE3
4	Q5, Q8, Q11, Q13	TRAN MOSFET N-CHANNEL ENHANCEMENT MODE	DIODES INCORPORATED, 2N7002A-7
6	Q9, Q12, Q14–Q17	TRAN P-CHANNEL MOSFET 20V 5.9A SOT-23	VISHAY, SI2365EDS-T1-GE3
18	R1–R5, R7, R66–R73, R127, R133, R138, R146	RES. SMD 10kΩ 1% 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3EKF1002V
75	R11–R15, R23–R27, R46–R50, R52, R54–R59, R79–R85, R96–R102, R108–R114, R121, R122, R125, R126, R128, R131, R132, R134, R137, R140, R142, R143, R145, R149, R150, R154, R155, R163–R166, R168–R170, R172–R179	DO NOT INSTALL	TBD, TBD0603
15	R86–R90, R103–R107, R116–R120	RES. SMD TBD R2512H35	VISHAY, TBD2512H35
4	R78, R91, R115, R123	DO NOT INSTALL	TBD, TBD2512
10	R124, R130, R136, R139, R144, R180–R184	RES. SMD 301Ω 1% 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3EKF3010V
12	R8, R9, R17, R20, R61–R64, R129, R135, R141, R147	RES. SMD 10Ω 1% 1/10W 0603 AEC-Q200	VISHAY, CRCW060310R0FKEA
18	R34, R37, R38, R41, R43, R148, R151–R153, R156–R162, R167, R171	RES. SMD 0Ω JUMPER 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3GEY0R00V
10	R6, R16, R18, R19, R21, R28, R51, R53, R60, R65	RES. SMD 4.99kΩ 1% 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3EKF4991V
1	R22	RES. SMD 1.65kΩ 1% 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3EKF1651V

QTY	REFERENCE	PART DESCRIPTION	MANUFACTURER/PART NUMBER
4	R29, R30, R42, R44	DO NOT INSTALL	TBD, TBD0805
3	R31–R33	RES. SMD 1Ω 5% 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3GEYJ1R0V
2	R35, R39	RES. SMD 0.002Ω 1% 1W 2512 AEC-Q200	VISHAY, WSL25122L000FEA
1	R45	RES. SMD 787Ω 1% 1/10W 0603 AEC-Q200	PANASONIC, ERJ-3EKF7870V
4	R74–R77	RES. SMD 0.01Ω 1% 2W 2512 AEC-Q200	VISHAY, WSL2512R0100FEA18
2	R92, R94	RES. SMD 0Ω JUMPER 2512 AEC-Q200	VISHAY, WSL251200000ZEA9
4	S1–S4	SWITCH SLIDE DPDT 300mA 6V	C & K, JS202011CQN
47	TP1–TP4, TP11–TP19, TP22, TP25–TP57	CONN-PCB SOLDER TERMINAL TEST POINT TURRET 0.094 MTG. HOLE PCB 0.062" THK	MILL-MAX, 2501-2-00-80-00-00-07-0
10	TP5–TP10, TP20, TP21, TP23, TP24	CONN-PCB THREADED BROACHING STUD 10-32 FASTENER 0.625", USE ALT_SYMBOL FOR C450D200 PAD	CAPTIVE FASTENER, CKFH1032-10
1	U1	IC-ADI LOW VOUT QUAD 31.25A OR SINGLE 125A μModule REGULATOR WITH DIGITAL POWER SYSTEM MANAGEMENT, PRELIM	ANALOG DEVICES, LTM4682
1	U3	IC EEPROM 2K-BIT I2C SERIAL EEPROM 400kHz	MICROCHIP TECH., 24LC025-I/ST
Hardware: For Evaluation Board Only			
1		STANDOFF, SELF-RETAINING SPACER, 12.7mm LENGTH	WURTH ELEKTRONIK, 702935000
10		CONNECTOR RING LUG TERMINAL, 10 CRIMP, NO INSULATED	KEYSTONE, 8205
10		WASHER, #10 FLAT STEEL	KEYSTONE, 4703
20		NUT, HEX STEEL, 10-32 THREAD, 9.27mm OUT DIA	KEYSTONE, 4705
3		SHUNT, 2mm JUMPER WITH TEST POINT	WURTH ELEKTRONIK, 60800213421
Optional Evaluation Board Circuit Components			
4	CO9, CO18, CO27, CO36	CAP. ALUM POLY 7343-20	PANASONIC, EEFGX0E471R
2	Q7, Q10	TRAN P-CHANNEL MOSFET 20V 5.9A SOT-23	VISHAY, SI2365EDS-T1-GE3
2	R93, R95	RES. SMD 0Ω JUMPER 2512 AEC-Q200	VISHAY, WSL251200000ZEA9
2	R36, R40	RES. SMD 0.002Ω 1% 1W 2512 AEC-Q200	VISHAY, WSL25122L000FEA

EVAL-LTM4682-A1Z Schematics



*ASSEMBLY OPTION TABLE

VARIANTS	CIRCUIT CONFIGURATION	MAX IOUT
A1Z	4-PHASE 4 OUTPUT	31.25A PER CHANNEL
AZZ	4-PHASE 1 OUTPUT	125A

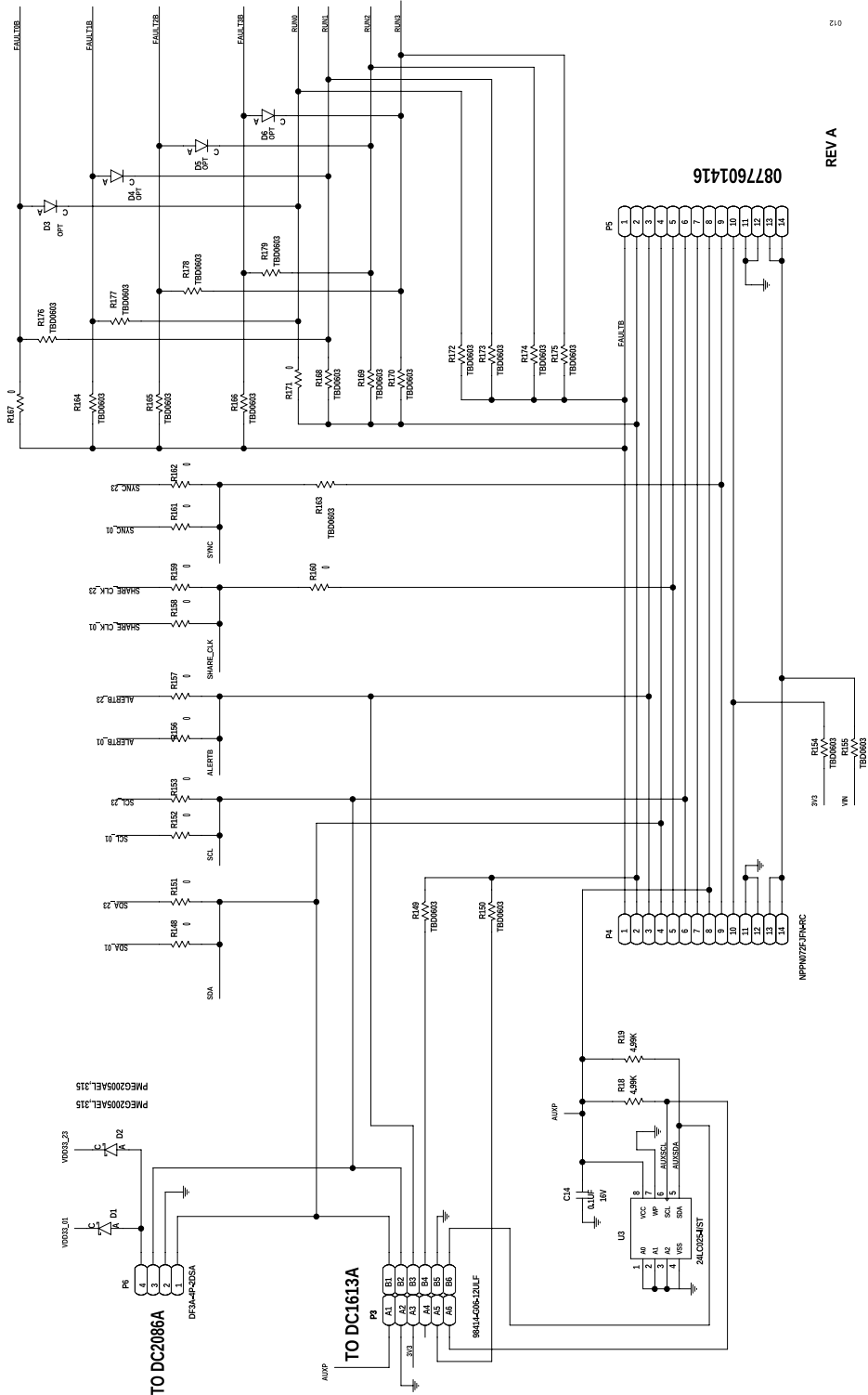
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REV A

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EVAL-LTM4682-A1Z Schematics (continued)



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REV A

Ordering Information

PART	TYPE
EVAL-LTM4682-A1Z	The EVAL-LTM4682-A1Z evaluation board features the LTM4682, quad output regulator with digital power system management (PSM). The EVAL-LTM4682-A1Z evaluation board is configured as a 4-phase four outputs.

Revision History

REVISION NUMBER	REVISION DATE	DESCRIPTION	PAGES CHANGED
0	03/25	Initial release	—

Notes

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