

DESCRIPTION

Demonstration circuit 1062 is a micropower synchronous buck-boost + buck converter based on the LTC3520. The DC1062 has an input voltage range of 2.2 V to 5.5V and three output voltages: 3.3V @ up to 1A, 1.8V @ 600mA and 1.5V @ 200mA. The 1.5Vout is an LDO regulator derived from either the 3.3Vout or the 1.8Vout. The Buck-Boost + Buck converters can operate in either low-power burst mode or low-noise fixed-frequency PWM mode. The switching frequency is programmed using a single resistor and each of the

output voltages can be independently shutdown. The LTC3520 comes in a 24 pin 4x4 QFN package. These features make the DC1062 demo board an ideal circuit for use in Li-Ion battery-powered, hand-held applications.

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

LTC is a trademark of Linear Technology Corporation

QUICK START PROCEDURE

Refer to Figure 1 for proper measurement equipment setup and follow the procedure below:

1. Start with Loads 1, 2 and 3 set to 0A.
2. Set Power Supply anywhere between 2.2V to 5.5V.
3. Loads 1, 2 and 3 can be set from 0 – 500mA, 0 – 600mA and 0 – 200mA respectively. Load 1 can be set up to 1A for $V_{in} > 3V$.

QUICK START GUIDE FOR DEMONSTRATION CIRCUIT 1062

DUAL BUCK-BOOST + BUCK SYNCHRONOUS CONVERTERS

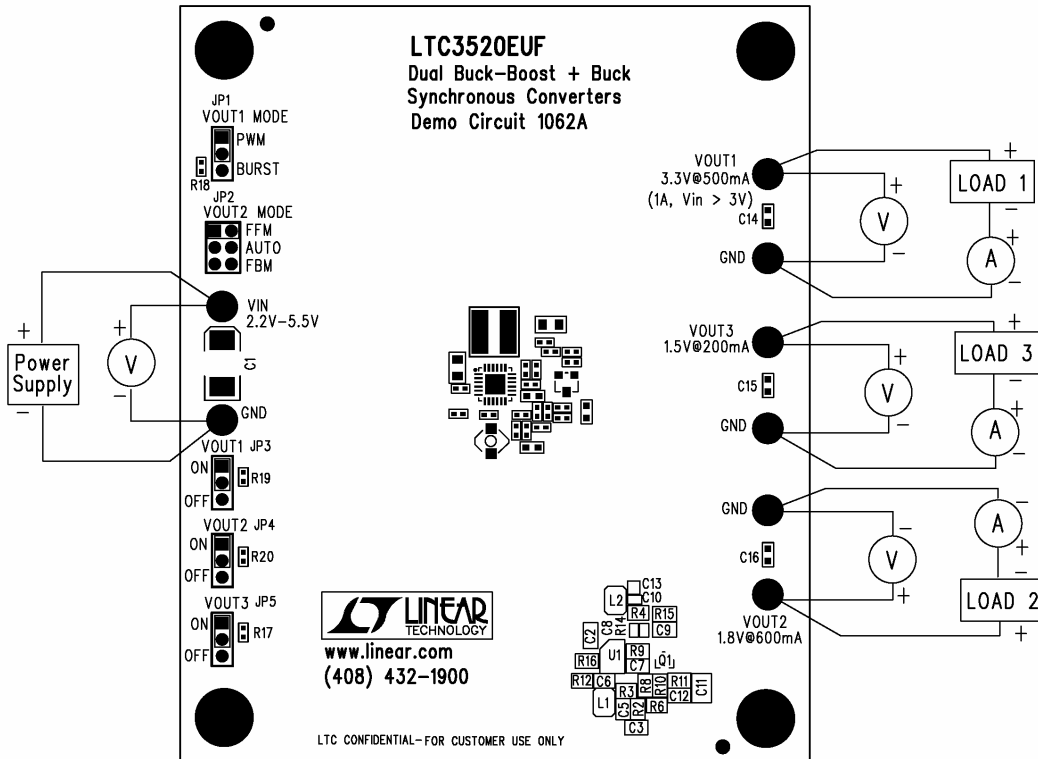


Figure 1.:Proper Measurement Equipment Setup



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DUAL BUCK-BOOST + BUCK SYNCHRONOUS CONVERTERS

Item	Qty	Reference	Part Description	Manufacturer / Part #
REQUIRED CIRCUIT COMPONENTS:				
1	1	C1	CAP., TANT, 150uF, 10V, 20%, 7343	AVX, TPSD157M010R0100
2	1	C2	CAP., X5R, 22uF, 6.3V, 10%, 0805	Taiyo Yuden, JMK212BJ226KG-T
3	1	C11	CAP., X5R, 4.7uF, 6.3V, 10%, 0603	AVX, 06036D475KAT2A
4	1	C13	CAP., X5R, 47uF, 6.3V, 20%, 0805	Taiyo Yuden, JMK212BJ476MG-T
5	1	C3	CAP., X5R, 10uF, 6.3V, 20%, 0603	Taiyo Yuden, JMK107BJ106MA-T
6	3	C6,C8,C9	CAP., X5R, 0.1uF, 10V, 10%, 0402	Taiyo Yuden, LMK105BJ104KV-F
7	1	C7	CAP., C0G, 470pF, 6.3V, 5%, 0603	AVX, 06036A471JAT2A
8	1	C10	CAP., C0G, 56pF, 16V, 5%, 0402	AVX, 0402YA560JAT2A
9	1	C12	CAP., C0G, 33pF, 16V, 10%, 0402	AVX, 0402YA330KAT2A
10	3	C14,C15,C16	CAP., X5R, 1uF, 6.3V, 10%, 0603	Taiyo Yuden, JMK107BJ105KA-T
11	1	L1	INDUCTOR., 4.7uH	Sumida, CDRH2D18/HPNP-4R7NC
12	1	L2	INDUCTOR., 4.7uH	Sumida, CDRH4D22HPNP-4R7NC
13	1	Q1	PNP TRANSISTERS, SOT23	ON Semiconductor, MMBT2907ALT1G
14	1	R2	RES., CHIP, 255K, 1/16W, 1%, 0402	VISHAY, CRCW0402255KFKE
15	1	R3	RES., CHIP, 200K, 1/16W, 1%, 0402	VISHAY, CRCW0402200KFKE
16	1	R4	RES., CHIP, 0, 1/16W, 0402	VISHAY, CRCW0402000Z0ED
17	4	R17-R20	RES., CHIP, 511K, 1/16W, 1%, 0402	VISHAY, CRCW0402511KFKE
18	1	R6	RES., CHIP, 1Meg, 1/16W, 1%, 0402	VISHAY, CRCW04021M00KFKE
19	1	R8	RES., CHIP, 309K, 1/16W, 1%, 0402	VISHAY, CRCW0402309KFKE
20	1	R9	RES., CHIP, 15K, 1/16W, 1%, 0402	VISHAY, CRCW040215K0KFKE
21	1	R10	RES., CHIP, 110K, 1/16W, 1%, 0402	VISHAY, CRCW0402110KFKE
22	1	R14	RES., CHIP, 10K, 1/16W, 1%, 0402	VISHAY, CRCW040210K0KFKE
23	1	R11	RES., CHIP, 100K, 1/16W, 1%, 0402	VISHAY, CRCW0402100KFKE
24	1	R12	RES., CHIP, 301K, 1/16W, 1%, 0402	VISHAY, CRCW0402301KFKE
25	1	R16	RES., CHIP, 54.9K, 1/16W, 1%, 0402	VISHAY, CRCW040254K9KFKE
26	1	U1	I.C, LTC3520EUF#PBF, 4X4mm QFN	LINEAR TECH., LTC3520EUF#PBF
ADDITIONAL DEMO BOARD CIRCUIT COMPONENTS:				
1	0	R15(OPT)	RES., CHIP, 0402	
2	0	C5(OPT)	CAP., 0402	
HARDWARE-FOR DEMO BOARD ONLY:				
1	8	E1-E8	TESTPOINT, TURRET, .095"	MILL-MAX, 2501-2-00-80-00-00-07-0
2	1	JP2	2MM DOUBLE ROW HEADER 2x3	SAMTEC, TMM-103-02-L-D
3	4	JP1,JP3-JP5	0.079 SINGLE ROW HEADER, 3 PIN	SAMTEC, TMM-103-02-L-S
4	5	JP1-JP5	SHUNT,	SAMTEC,2SN-BK-G
5	4	STAND-OFF	STAND-OFF, NYLON 0.50" tall	KEYSTONE, 8833(SNAP ON)