



LTC5584 Demo Board (DC1670A) Quick Start Guide

Quick Start Procedures:

1. Connect test equipments as shown in Figure 1 with all signal sources and DC supplies off.
2. Turn on the 5V DC power supply.
3. Connect EN to VCC_SENSE.
4. Monitor the DC volt meter, and adjust the DC supply voltage until VCC_SENSE is 5V.
5. Verify ICC is approximately 190mA.
6. Turn on the RF and the LO signal generators.
7. Adjust the spectrum analyzer settings. Be sure to use enough input attenuation to avoid over-driving the spectrum analyzer.
8. Take measurement.

Using the IIP2 and DC Offset adjustment features:

Method 1 (On-board trim pots):

1. **Install jumpers** to all 6 positions of jumper block JP1
2. Apply 1V DC to VCTRL.
3. Connect EIP2 and EDC to VCC_SENSE.
4. Adjust REF trim pot until the voltage on the REF test point reaches 0.5V.
5. Adjust IIP2 and DC Offset using the on-board trim pots.

Method 2 (External voltage sources):

1. **Remove jumpers** from all 6 positions of jumper block JP1.
2. Connect EIP2 and EDC to VCC_SENSE.
3. Using 5 separate DC power supplies, apply 0.5V to each of the demo board REF, IP2I, IP2Q, DCOI, and DCOQ test points.
4. Vary the voltages on IP2I, IP2Q, DCO1, and DCOQ to adjust IIP2 and DC Offset.

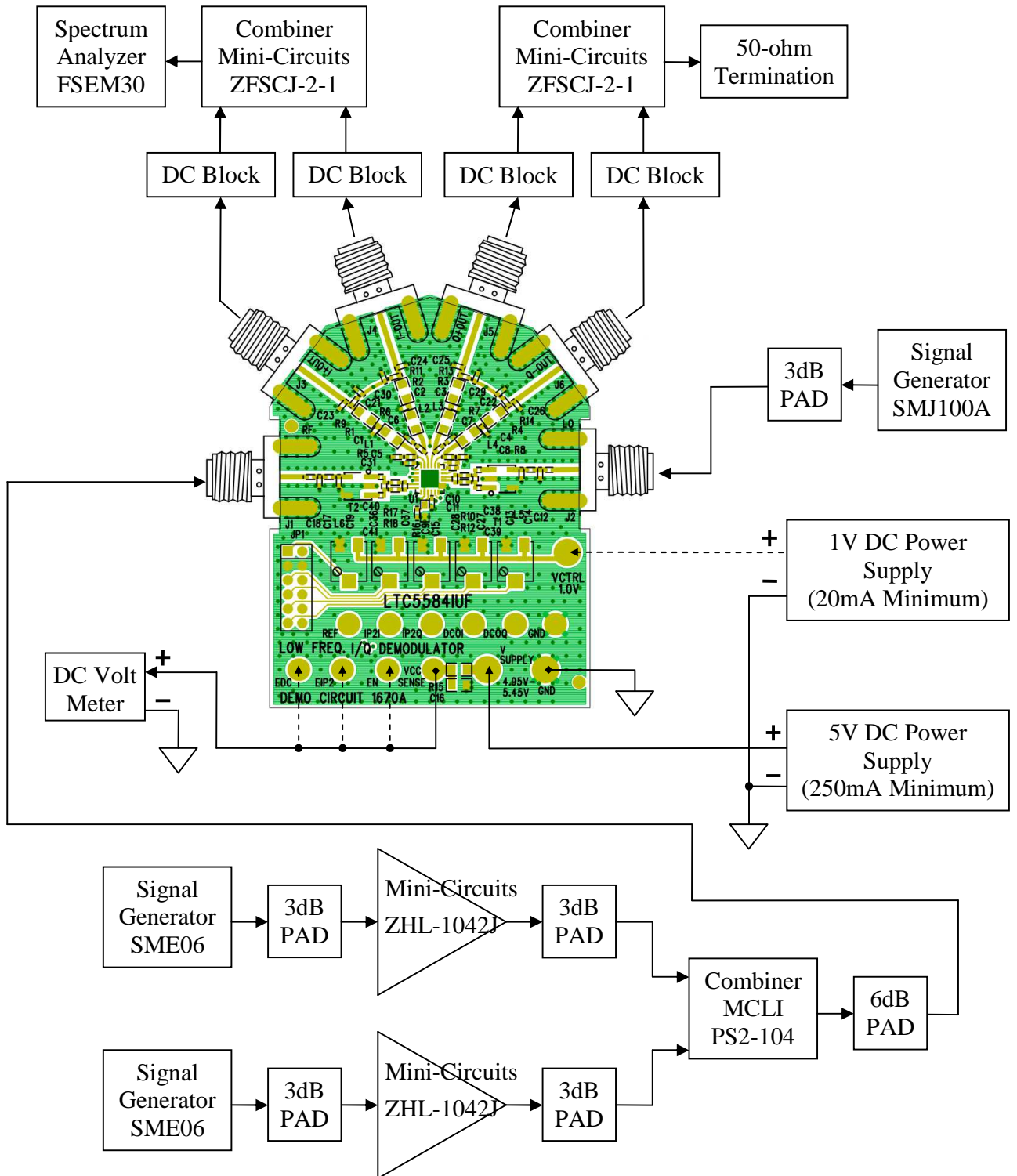


Figure 1. Measurement Setup

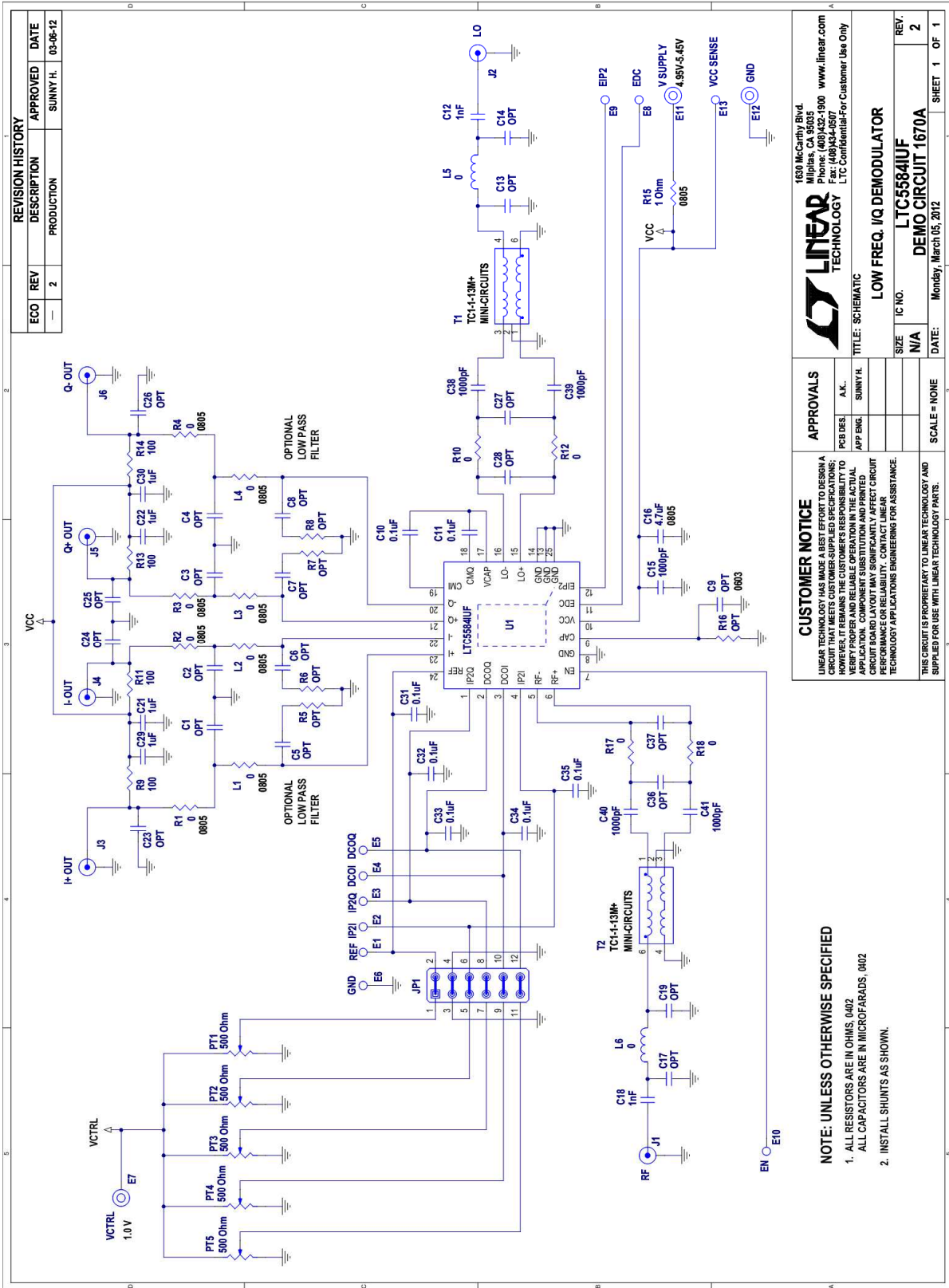


Figure2. Demo Board Schematic

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CUSTOMER NOTICE LINEAR TECHNOLOGY HAS MADE A BEST EFFORT TO DESIGN A CIRCUIT THAT MEETS CUSTOMER-SUPPLIED SPECIFICATIONS. HOWEVER, LINEAR TECHNOLOGY DOES NOT WARRANT ANY RESULTS TO BE OBTAINED FROM THIS DEMO BOARD. THE USER MUST VERIFY PROPER AND RELIABLE OPERATION IN THE ACTUAL APPLICATION. COMPONENT SUBSTITUTION AND PRINTED CIRCUIT BOARD LAYOUT MAY SIGNIFICANTLY AFFECT CIRCUIT PERFORMANCE OR RELIABILITY. CONTACT LINEAR TECHNOLOGY APPLICATIONS ENGINEERING FOR ASSISTANCE.		APPROVALS PCB DES. _____ APP ENG. _____ SUNNY H.	
TITLE: SCHEMATIC LOW FREQ. IQ DEMODULATOR		IC NO. LTC5584IUF	
SCALE = NONE		DATE: Monday, March 05, 2012	
THIS CIRCUIT IS PROPRIETARY TO LINEAR TECHNOLOGY AND SUPPLIED FOR USE WITH LINEAR TECHNOLOGY PARTS.		REV. 2 SHEET 1 OF 1	



Item	Qty	Reference	Part Description	Manufacturer / Part #
1	0	C1-C8,C14,C19,C23-C28,C36,C37,R5-R8,R16	OPT, 0402	
2	0	C9	OPT, 0603	
3	7	C10,C11,C31-C35	CAP., X7R, 0.1µF, 10%, 16V, 0402	MURATA, GRM155R71C104KA88D
4	6	C12,C18,R10,R12,R17,R18	RES., CHIP, 0 Ohm, 0402	VISHAY, CRCW04020000Z0ED
5	1	C13	CAP., COG, 2.2pF, +/- 0.05pF, 50V, 0402	MURATA, GJM1555C1H2R2WB01D
6	5	C15,C38-C41	CAP., X5R, 0.01µF, 10%, 50V, 0402	MURATA, GRM155R71H103KA88D
7	1	C16	CAP., X7R, 4.7µF, 10%, 16V, 0805	MURATA, GRM21BR71C475KA73L
8	1	C17	CAP., COG, 1.5pF, +/- 0.05pF, 50V, 0402	MURATA, GJM1555C1H1R5WB01D
9	4	C21,C22,C29,C30	CAP., X5R, 1µF, 10%, 10V, 0402	MURATA, GRM155R61A105KE15D
10	10	E1-E6,E8-E10,E13	TESTPOINT, TURRET, .063"	MILL-MAX, 2308-2-00-80-00-00-07-0
11	3	E7,E11,E12	TESTPOINT, TURRET, .094"	MILL-MAX, 2501-2-00-80-00-00-07-0
12	6	J1-J6	CONN., SMA, 50-OHM, EDGE-LANCH	E.F.JOHNSON, 142-0701-851
13	1	JP1	HEADER, 6 X 2 PIN, 2mm	SAMTEC TMM-106-02-L-D
14	6	XJP1 (6 LOCATION FOR JP1)	SHUNT	SAMTEC 2SN-BK-G
15	8	L1-L4,R1-R4	RES., CHIP, 0 Ohm, 0805	VISHAY, CRCW08050000Z0EA
16	1	L5	IND., MULTILAYER, 3.9nH, +/-0.3nH, 0402	MURATA, LQG15HS3N9S02D
17	1	L6	IND., MULTILAYER, 5.6nH, +/-0.3nH, 0402	MURATA, LQG15HS5N6S02D
18	5	PT1,PT2,PT3,PT4,PT5	POT., 4mm SMD, 500 Ohm	BOURNS, 3214X-1-501-E
19	4	R9,R11,R13,R14	RES., CHIP, 100 Ohm, 1%, 1/16W, 0402	VISHAY, CRCW0402100RFKED
20	1	R15	RES., CHIP, 1 Ohm, 1%, 1/8W, 0805	VISHAY, CRCW08051R00FNEA
21	2	T1,T2	TRANSFORMER, RF, 1:1, 4.5-3000MHz	MINI-CIRCUITS, TC1-1-13M+
22	1	U1	IC, LTC5584IUF#PBF, QFN 4mm X 4mm	LINEAR TECH., LTC5584IUF#PBF