



## 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.

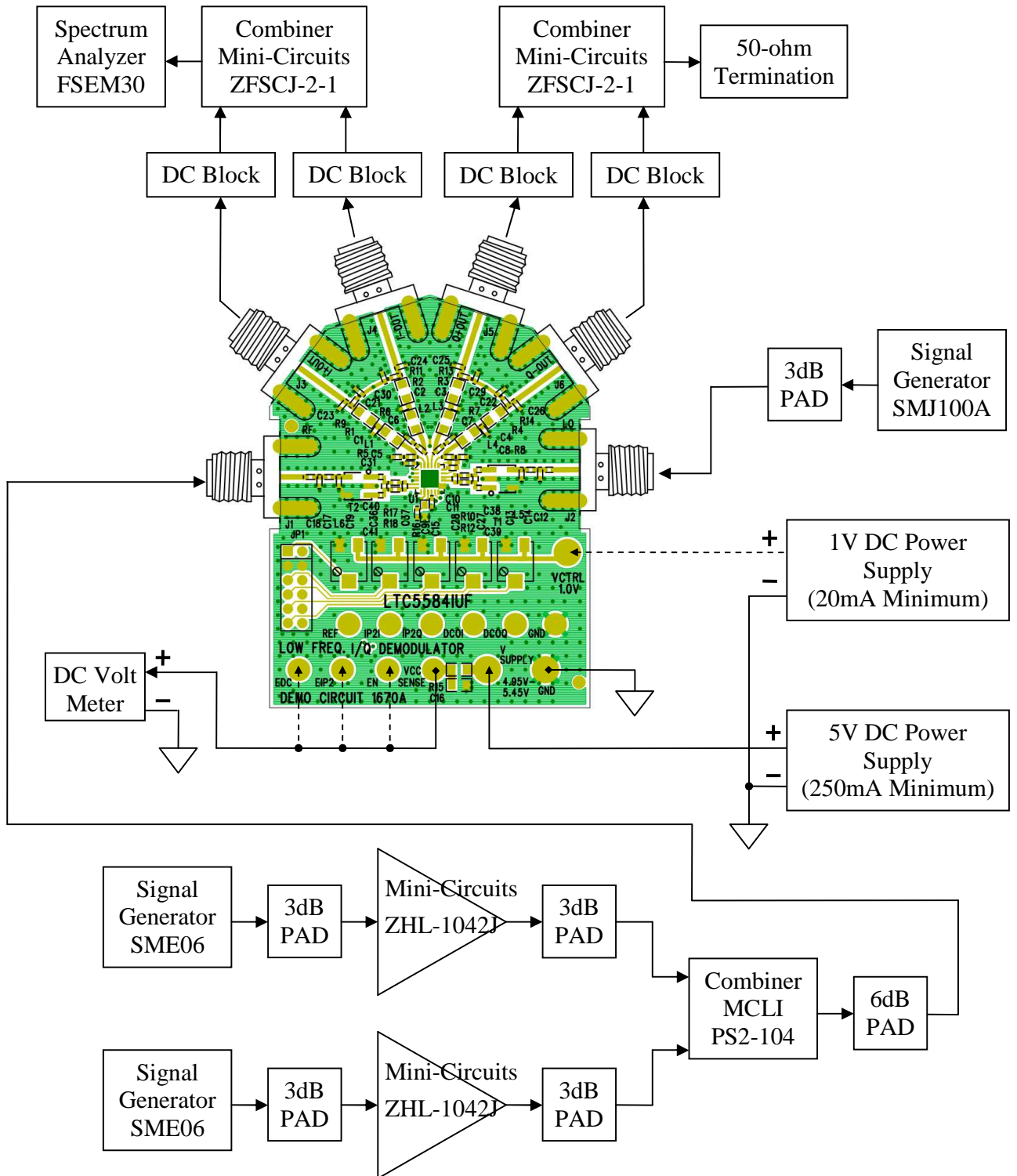
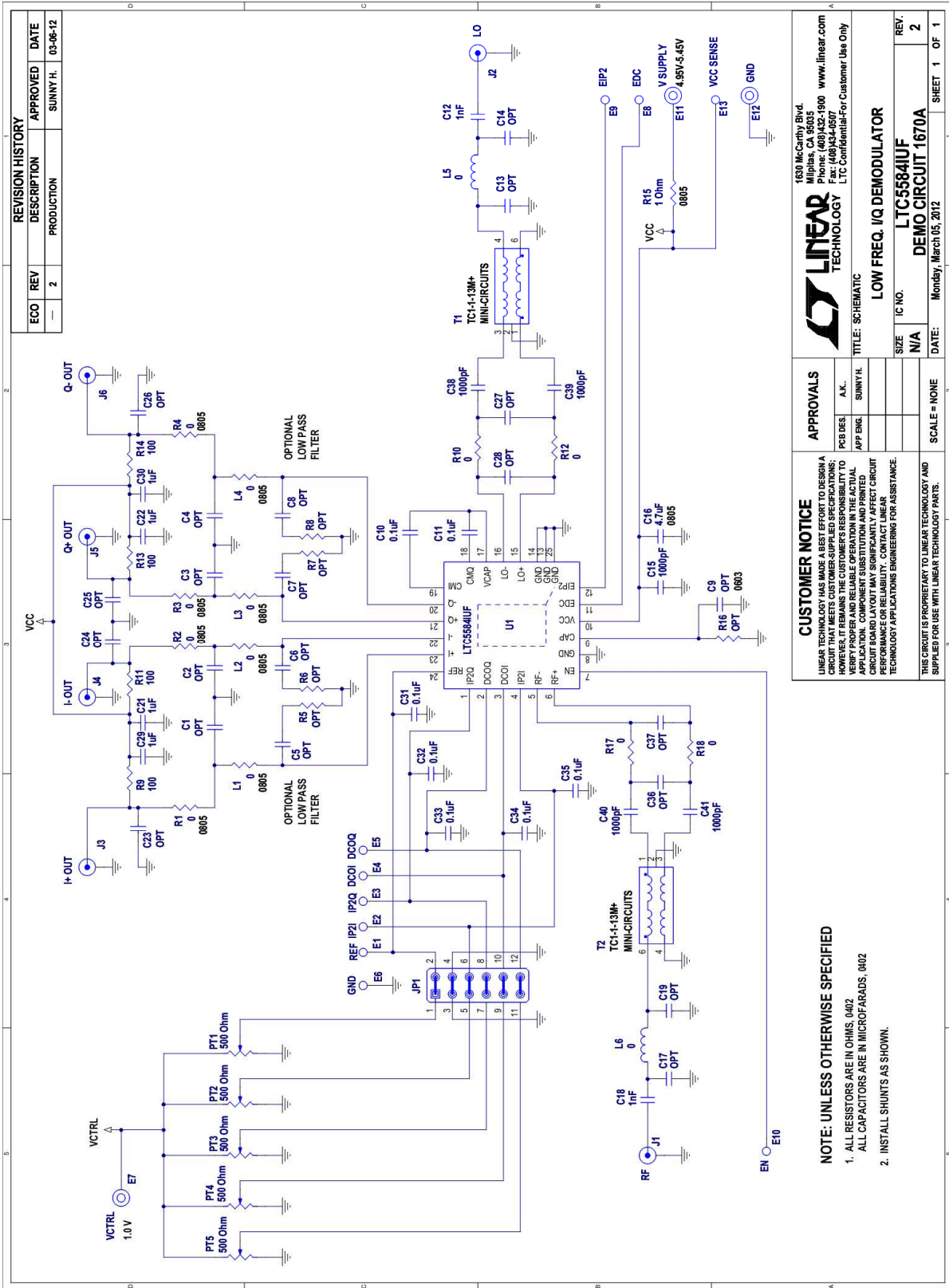


Figure 1. Measurement Setup



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**APPROVALS**

PCB DES.	A.K.
APP ENG.	SUNNY H.

**LINEAR TECHNOLOGY**  
 1630 McCarthy Blvd.  
 Milpitas, CA 95035  
 Phone: (408)432-1900 www.linear.com  
 Fax: (408)434-0507  
 LTC Confidential-For Customer Use Only

TITLE: SCHEMATIC  
 LOW FREQ. IQ DEMODULATOR  
 IC NO. LTC5584IUF  
 DEMO CIRCUIT 1670A

SCALE = NONE  
 DATE: Monday, March 05, 2012  
 SHEET 1 OF 1

Figure2. Demo Board Schematic



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