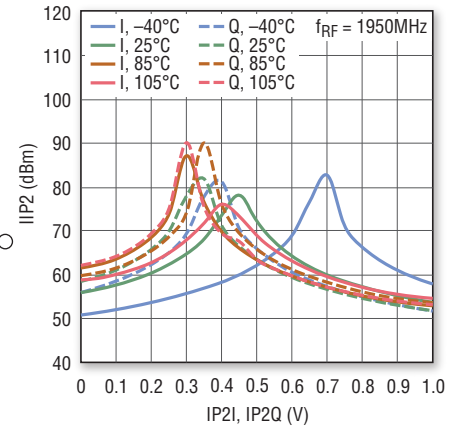
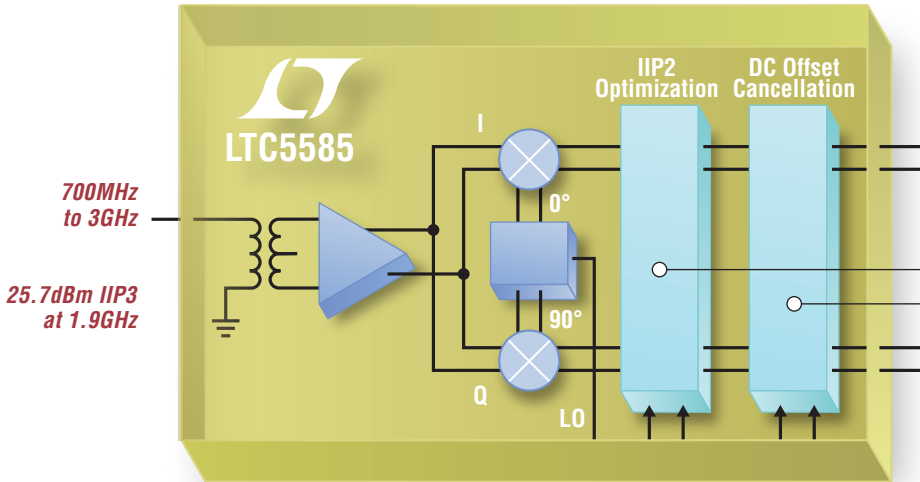
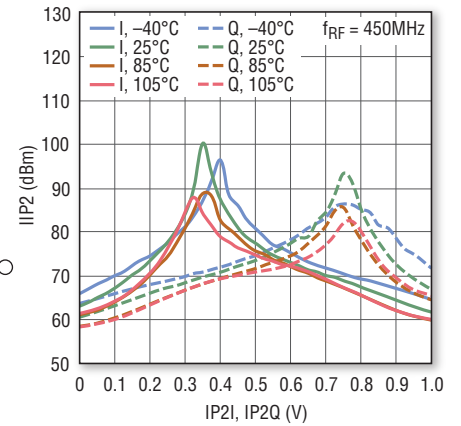
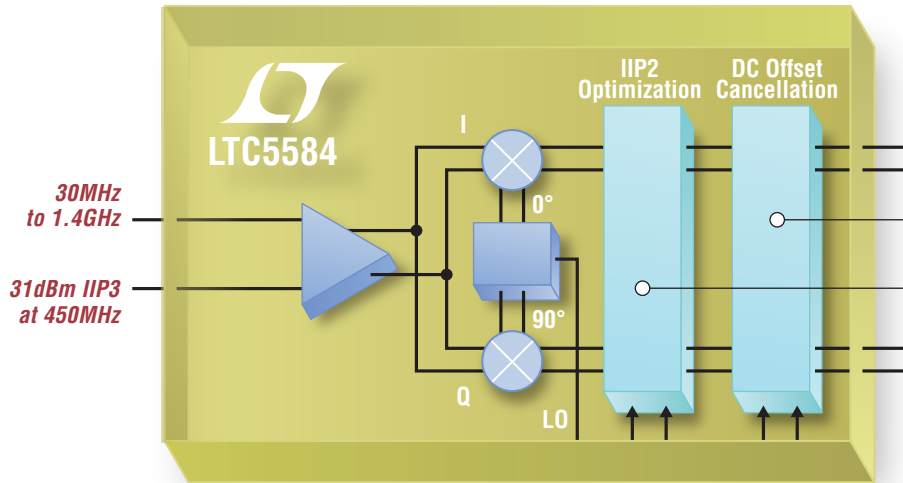


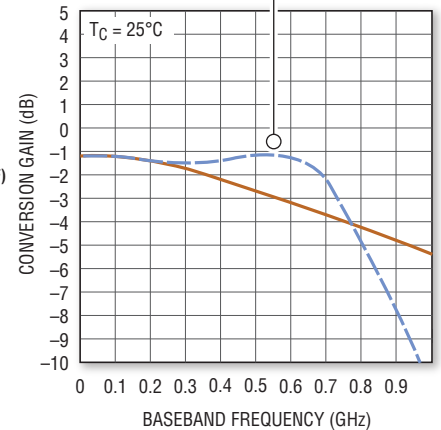
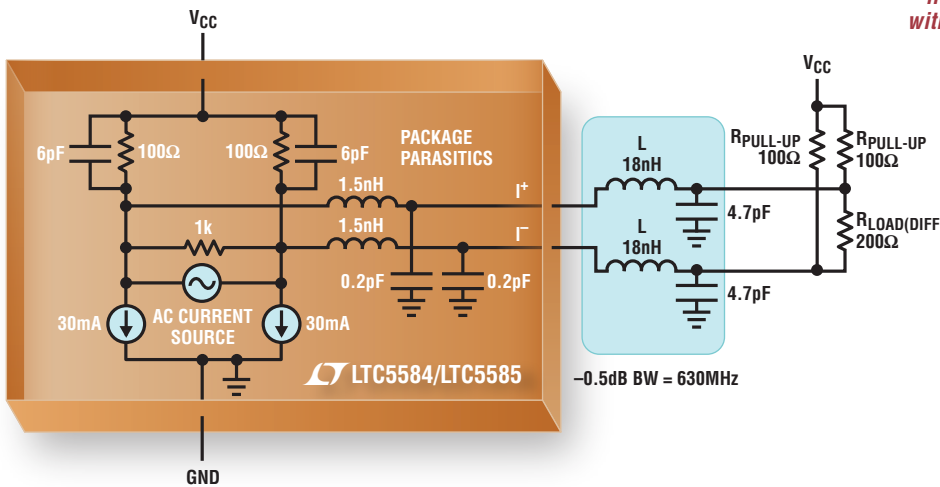
Ultra-Wideband, High Linearity I/Q Demodulators



DC Offset Adjustable to Zero



Demodulation Bandwidth Extendable from 250MHz to 600MHz with <math><0.5\text{dB}</math> Gain Flatness



— R = 100Ω, BW = 250MHz
 - - - L = 18nH, C = 4.7pF, R = 200Ω, BW = 630MHz

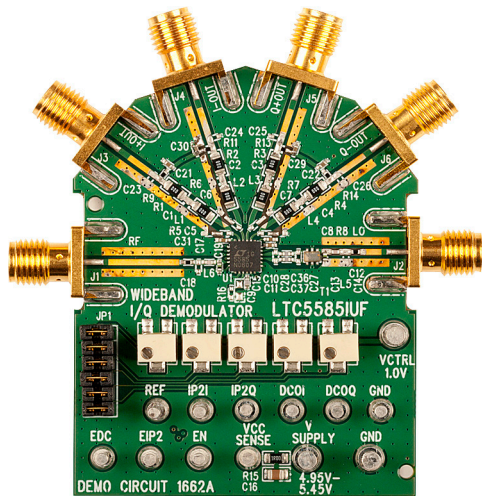
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Linear's Quadrature I/Q Demodulator Family

Parameters	LTC5585	LTC5584	LT5575	LT5517	LT5515	LT5516
Operating Frequency Range	700MHz to 3GHz	30MHz to 1.4GHz	800MHz to 2.7GHz	40MHz to 900MHz	1.5 to 2.5GHz	800MHz to 1.5GHz
LO Input Frequency	= RF	= RF	= RF	= 2xLO	= RF	= RF
Baseband Bandwidth (-3dB)	530MHz	530MHz	490MHz	130MHz	260MHz	260MHz
IIP3	25.7dBm	31dBm	22.6dBm	21dBm	20dBm	21.5dBm
IIP2 (Before Adjustment)	60dBm	70dBm	60dBm	58dBm	51dBm	52dBm
IIP2 (After Adjustment)	>80dBm	>80dBm	-	-	-	-
DC Offset Cancellation	Yes	Yes	No	No	No	No
Conversion Gain (Voltage)	2.4dB	5.4dB	4.2dB	3.3dB	-0.7dB	4.3dB
Input P1dB	16dBm	13.6dBm	11.2dBm	10dBm	9dBm	6.6dBm
Noise Figure	12.7dB	9.9dB	12.7dB	12.4dB	16.8dB	12.8dB
Noise Figure Under Blocking	14.6dB at 0dBm	13.6dB at 0dBm	20dB at 0dBm	-	-	-
I-Q Amplitude Mismatch	0.05dB	0.02dB	0.01dB	0.03dB	0.3dB	0.2dB
I-Q Phase Mismatch	0.7°	0.25°	0.4°	0.7°	1°	1°
Supply Voltage	5V	5V	5V	5V	5V	5V
Supply Current	200mA	200mA	132mA	90mA	125mA	117mA
Package	4mm x 4mm QFN-24	4mm x 4mm QFN-24	4mm x 4mm QFN-16	4mm x 4mm QFN-16	4mm x 4mm QFN-16	4mm x 4mm QFN-16



Design Note DN1027
Optimizing the Performance of Very Wideband Direct Conversion Receivers

Download Design Note:
www.linear.com/DN1027