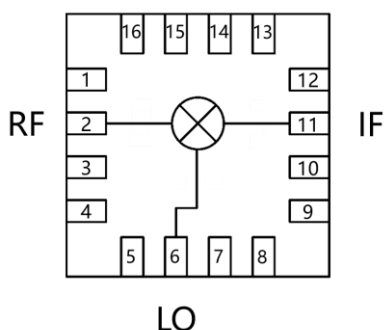


Description

The YC505 is a passive mixer for cellular infrastructure with broad LO drive range of up to 23dBm with GaAs technology.

The mixer is integrated with a matching network at the RF, IF and LO ports. It provides a single-ended interface, eliminating the need for external matching such as RF baluns.



Applications

- ◆ Cellular infrastructure
- ◆ Base Station Receivers
- ◆ Wireless Access Points
- ◆ High Dynamic Range Infrastructure System

Features

- ◆ Conversion Loss : 6.5dB @fRF=3400MHz
- ◆ LO Drive Level : 10 to 23dBm
- ◆ Optimized for 3.5GHz Band
- ◆ Single-Ended Interface

Electrical Specification

Parameters	Min	Typ	Max	Unit	Test Conditions
RF Frequency Range	2900		3800	MHz	
LO Frequency Range	2068		2068	MHz	Low-Side LO
IF Frequency Range	832		1732	MHz	
Up-Conversion Loss		6.5		dB	fLO = 2068MHz, fIF = 1332MHz, fRF = 3400MHz, LO power = 14dBm, Input Power = 14dBm
Down-Conversion Loss				dB	
LO to RF Isolation		19.3		dB	LO Power = 18dBm, fRF = 3400MHz
LO to IF Isolation		14.2		dB	LO Power = 18dBm, fIF = 1332MHz
IF to RF Isolation		15.3		dB	LO power = 18dBm, fIF = 1332MHz, fRF =3400MHz
ACLR ²⁾ , Pout=3dBm	-40		-38	dBc	LO power = 17dBm, fRF = 2900MHz
	-36		-34	dBc	LO power = 17dBm, fRF = 3450MHz
	-42		-40	dBc	LO power = 17dBm, fRF = 3800MHz

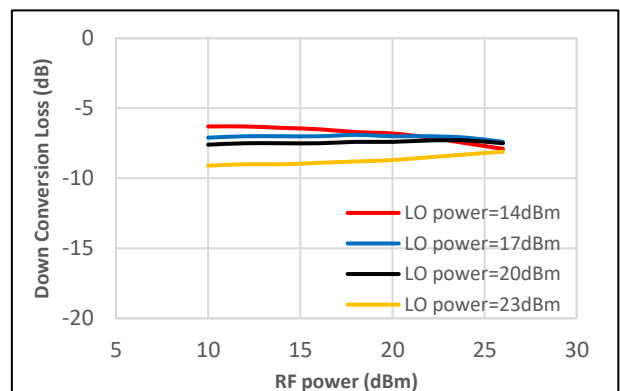
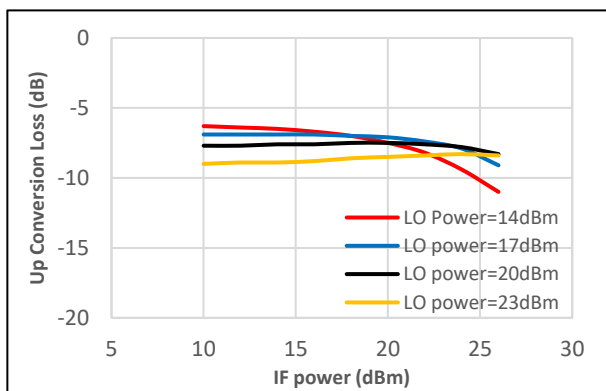
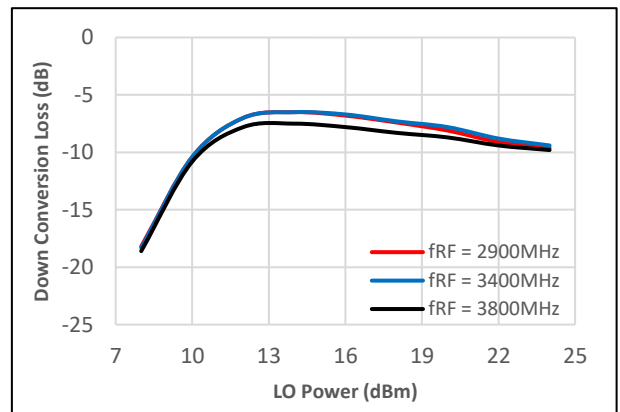
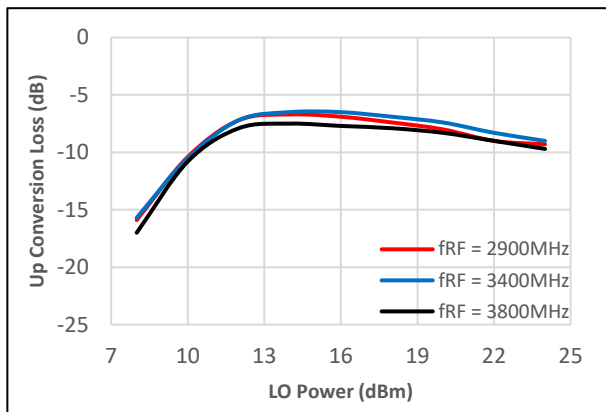
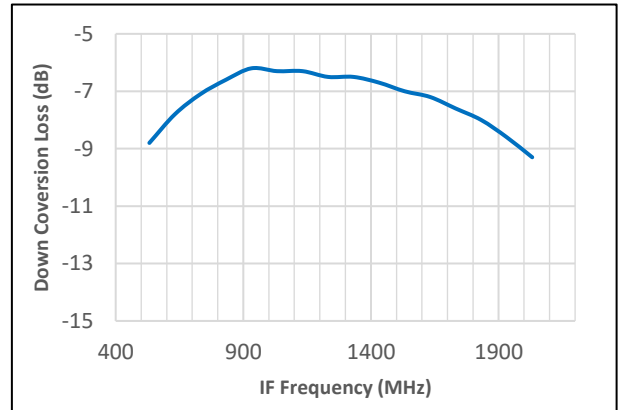
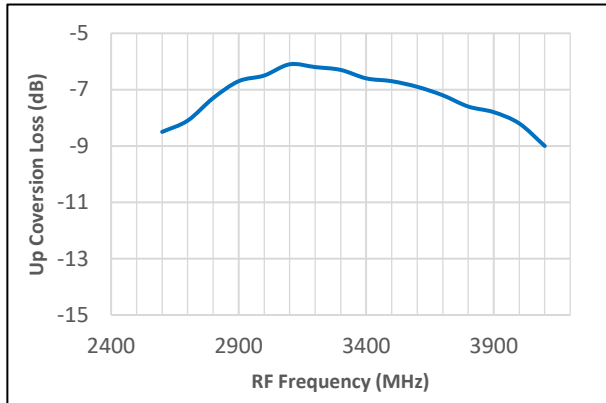
Notes:

1) Test conditions unless otherwise noted : Temp. = 25°C, Z0 = 50Ω.

2) Tested under modulated signal (LTE 100MHz 1c, PAR 8.7dB at 0.01% probability on CCDF)

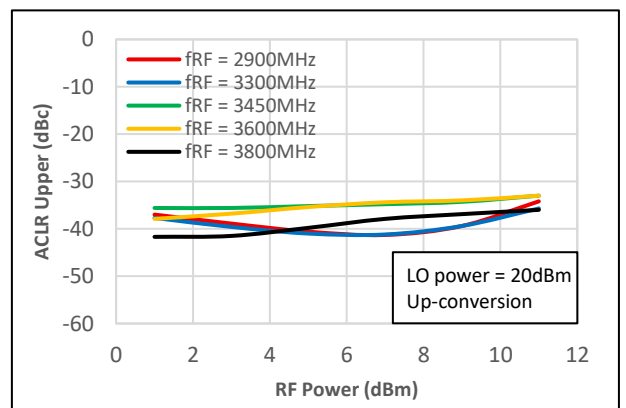
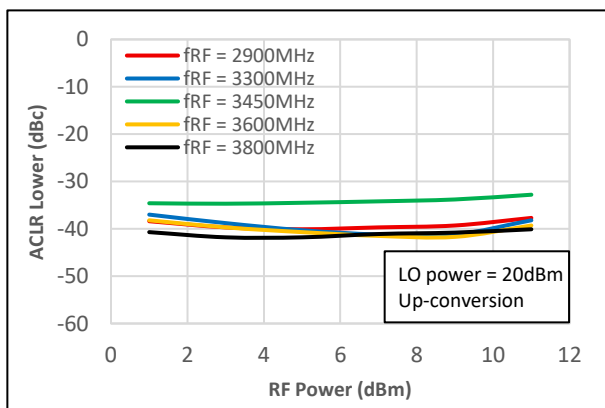
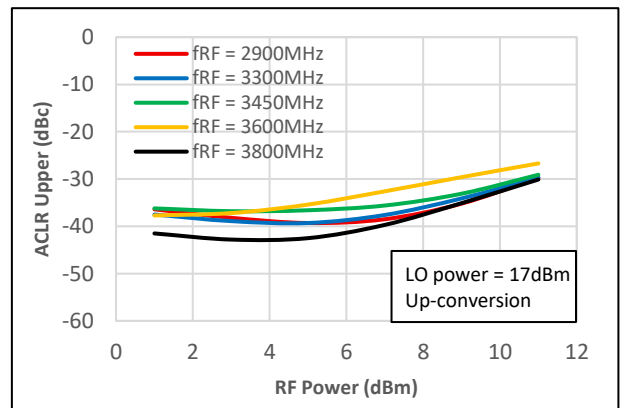
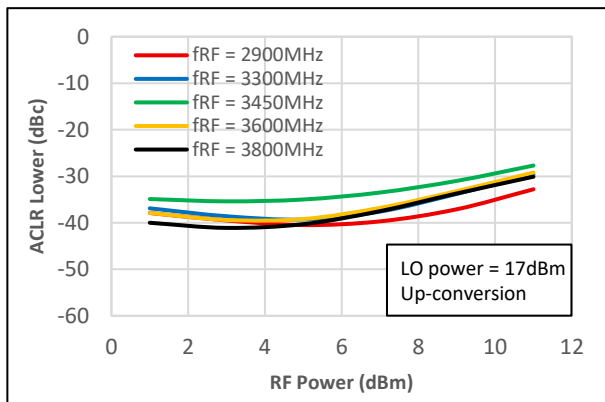
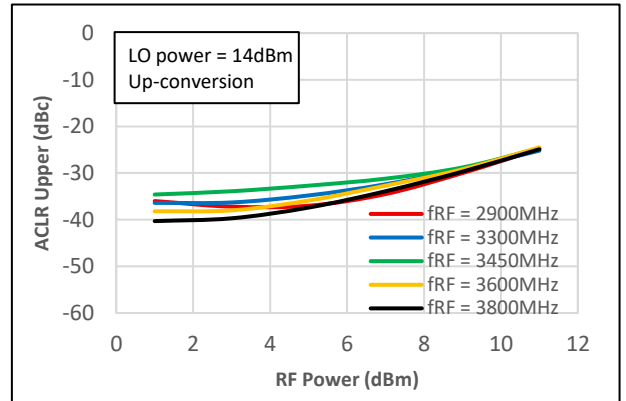
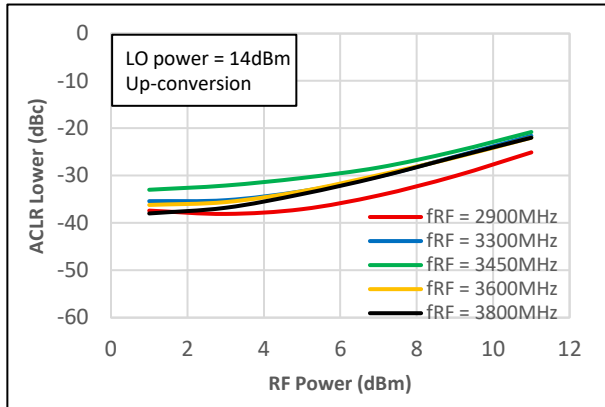
Performance Plots

Unless otherwise noted : f_{LSB} , f_{LO} = 2068MHz, Input Power = 14dBm @25°C, Z_0 = 50Ω.



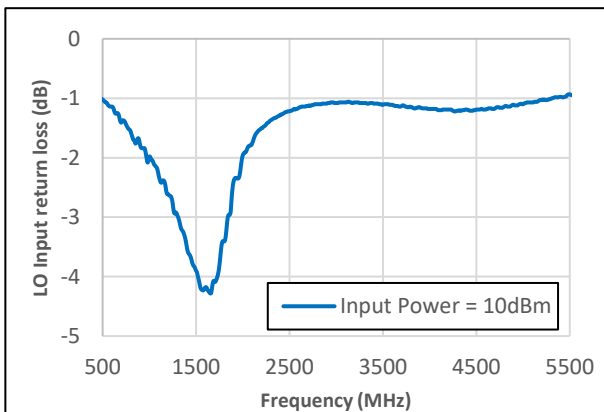
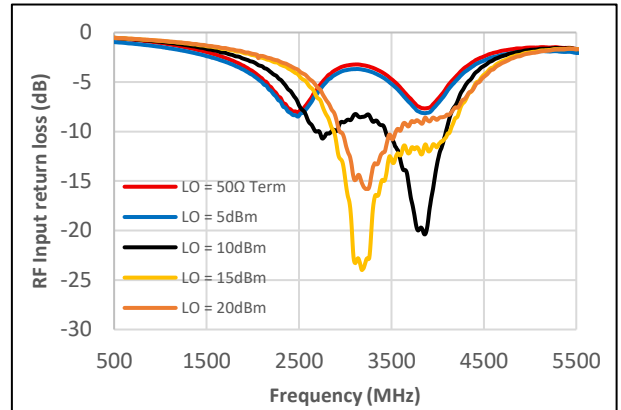
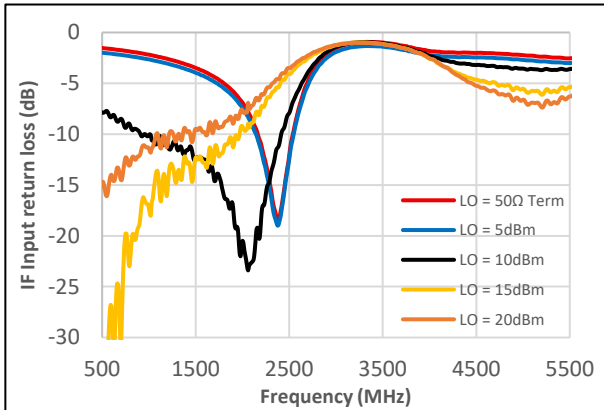
Performance Plots

Unless otherwise noted : $LSB, f_{LO} = 2068\text{MHz}$ @ 25°C , $Z_0 = 50\Omega$.
Source Signal : LTE 100MHz 1c, PAR 8.7dB at 0.01% probability on CCDF.



Performance Plots

Unless otherwise noted : S-parameters are de-embedded @25°C, Z0 = 50Ω, Input Power = 0dBm.



Recommended Operating Condition

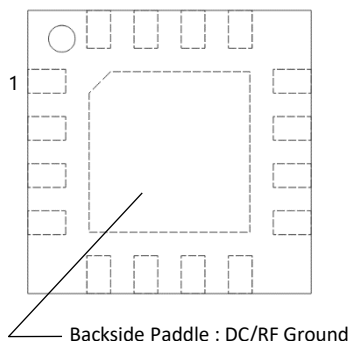
Parameter	Min	Typ	Max	Unit
Operating Temperature	-40	25	85	°C
Storage Temperature	-55	-	150	°C

Absolute Maximum Ratings

Parameter	Rating	Unit
Junction Temperature	TBD	°C
RF/LO/IF Input Power (CW)	34	dBm

Pin Description

Pin No.	Function	Description
2	RF	RF Input/Output.
6	LO	LO Input.
11	IF	IF Output/Input
1, 3~5, 7~10, 12~16	NC	Not Connected.



MSL Rating

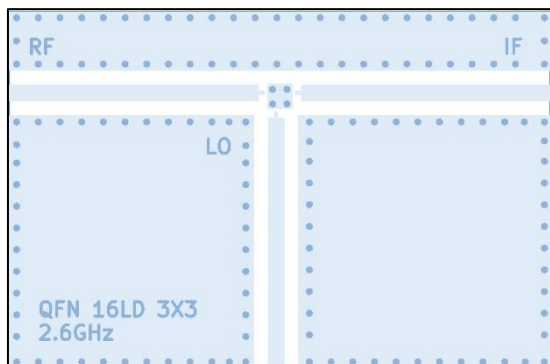
MSL Rating : TBD
 Test : TBD
 Standard : TBD

ESD Sensitivity Ratings

ESD Rating : TBD
 Test : TBD
 Standard : TBD



Evaluation Board PCB Information



Note:

- 1) Transmission Line Width : 1.1 mm
- 2) PCB Thickness : 0.578 mm

Layer		Material	Layer Thickness (mm)	Note
Top	Copper	RO4350B	0.035	1 oz
Core	Core		0.508	20 mil
Bottom	Copper		0.035	1 oz

Package Marking



PCB Land Pattern

