

## V Band Transmitter, 57-66GHz



### Product Overview

AT-VTX-5766 is a V-Band Transmitter, with gain=14dB, Psat=+17dBm typical.

The Tx is integrated with High Performance GaAs MMIC chips. RF frequency range is 57-66GHz, LO range is 9.1-11GHz with x6 times multiplier inside. IF range is DC-10GHz The receive is with compact size. LO/IF port is with SMA, and RF port is with standard WR-15.

More information, please visit [www.atmicrowave.com](http://www.atmicrowave.com)

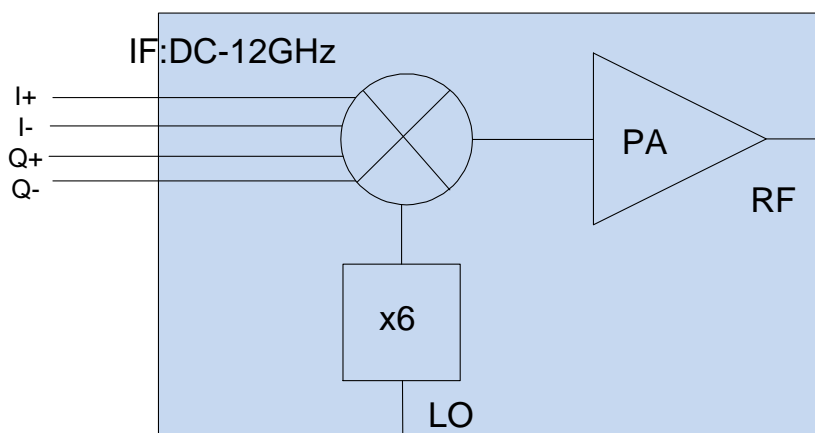
### Feature

- ✓ Frequency: 57-66GHz
- ✓ Gain: 14dB typical
- ✓ IF Range: DC-10GHz
- ✓ Psat: +17dBm Typical

### Application

- ✓ V Band Communication
- ✓ FOD (Foreigner Objects Debris)
- ✓ Test Equipment
- ✓ ROF (RF Over Fiber)
- ✓ Radar System

### Diagram Block





# AT-VTX-5766

Compact V Band Transmitter, 57-66GHz

## Key Features

Parameter	Min	Typical	Max
RF Frequency		57-66GHz	
IF Frequency (Note1)		DC-10GHz	
LO Frequency		9.1-11GHz	
LO Power		+10dBm	
6XLO Frequency		57-66GHz	
6XLO to RF Isolation		-25dBc	
P1dB		+16dBm	
Psat		+17dBm	
Conversion Gain(Combined IQ)		14 dB	
RF Return Loss		-12 dB	
LO Return Loss		-10 dB	
Drain Power Supply		+5/500mA	+8V
Spec Temp		25C	





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## Mechanical Information

Parameter	Description
RF Port	WR-15
LO Port	SMA Female
IF Port	SMA Female
Case Material (Note)	Copper
Finish	Gold Plated
Weight	315g
Dimension	See outline

Note: Aluminium for lighter weight is available according to request

## Absolute Maximum Ratings Table

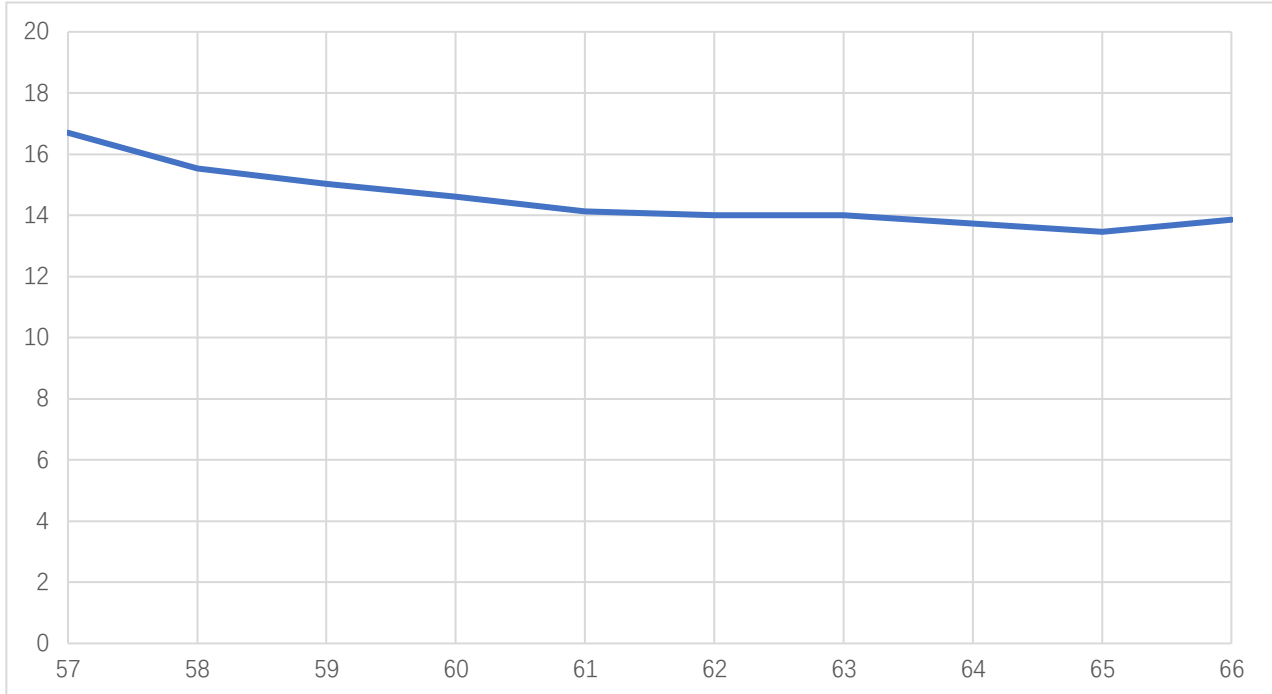
Parameter	Value
IF Power	+7dBm
LO Port	+15dBm
Power Supply	+7V
Operating Temperature	0 to +50C
Storage Temperature	-55 to +125C

## Test Condition

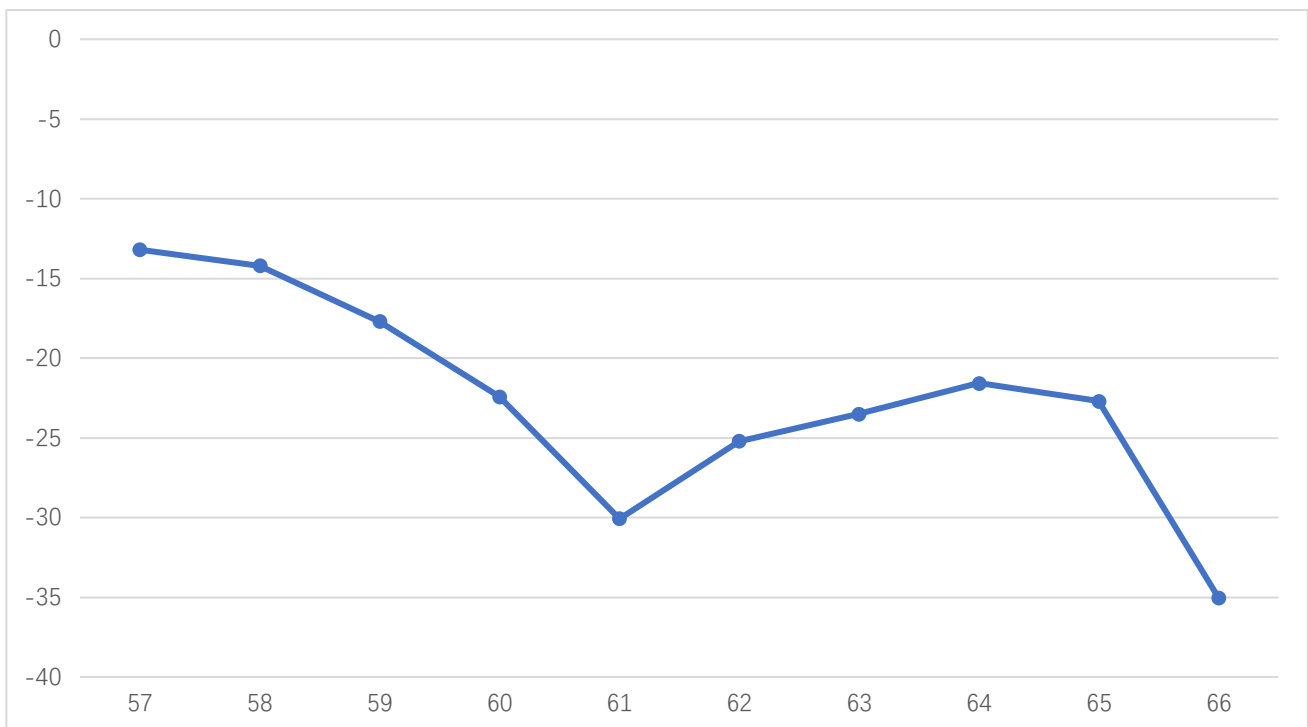
Parameter	Setting
IF Input Power	-3dBm
Input Frequency	2GHz
LO Power	+10dBm
Temperature	25C



## Test Data(25C)



Conversion Gain Vs Frequency (Combine IQ Together)



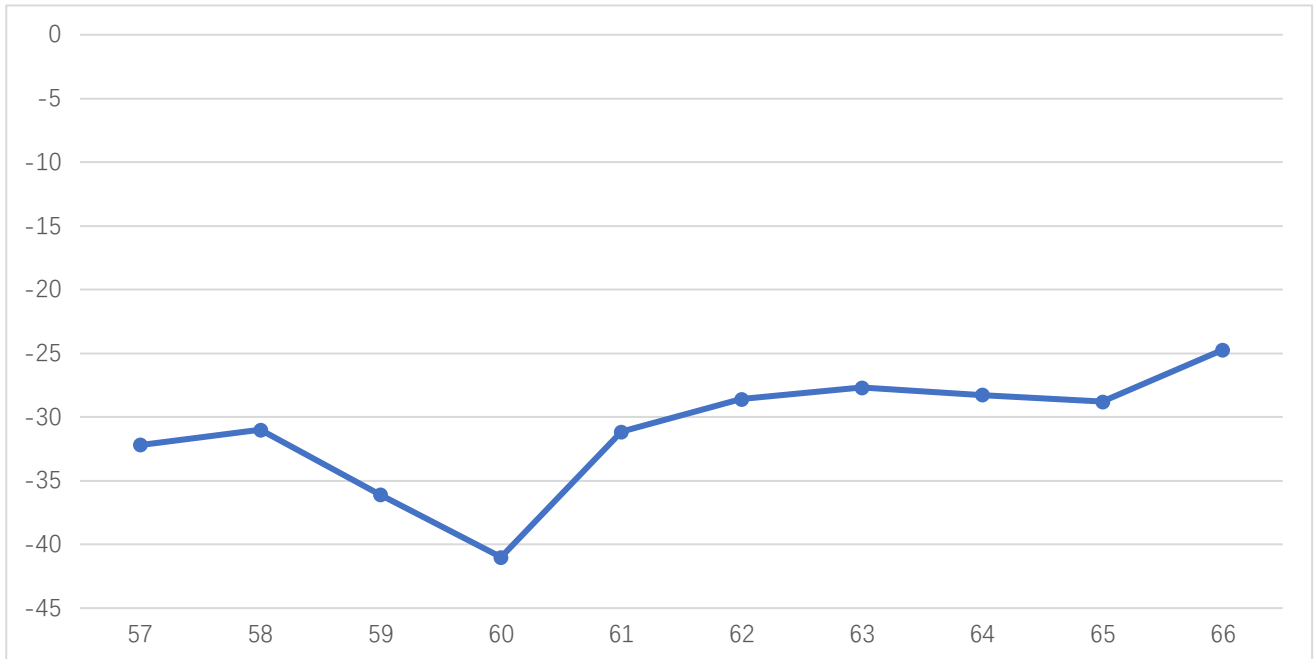
6XLO-RF Isolation



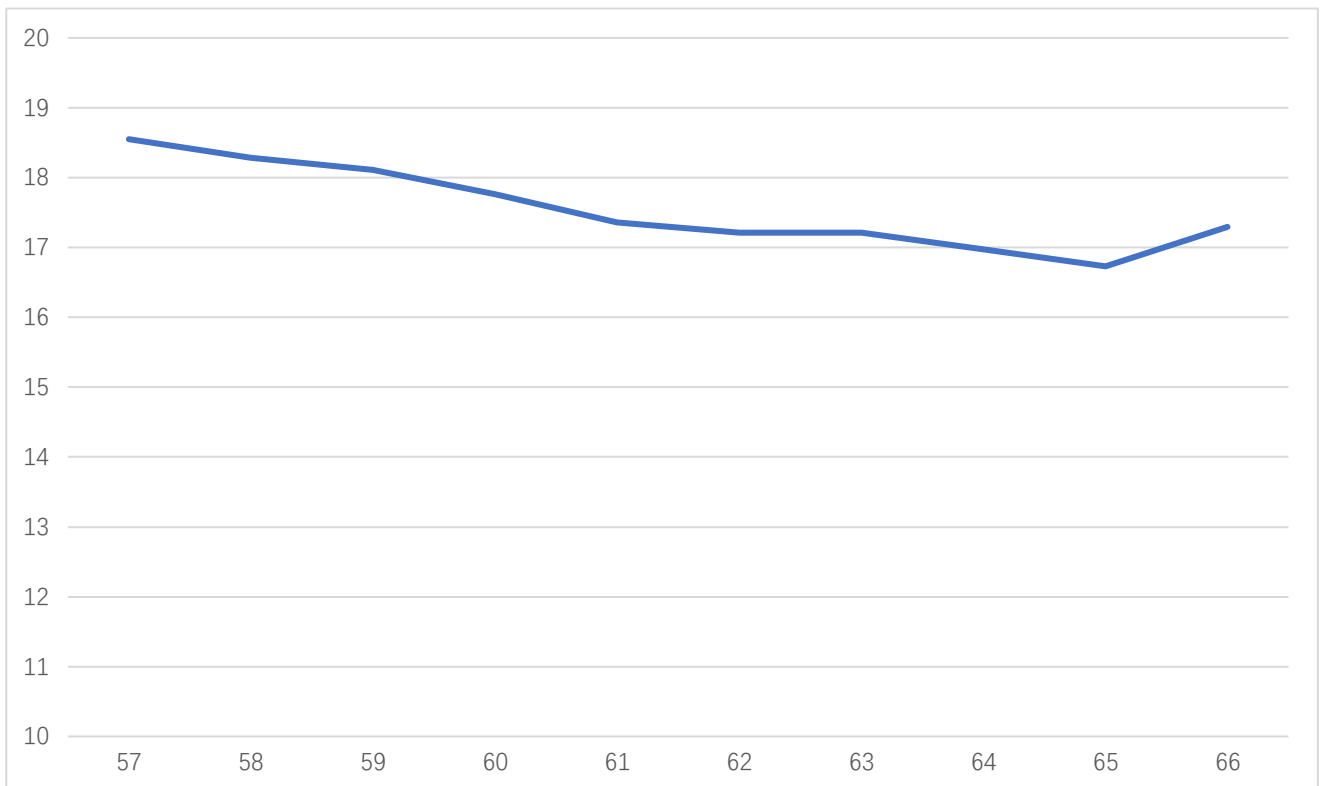


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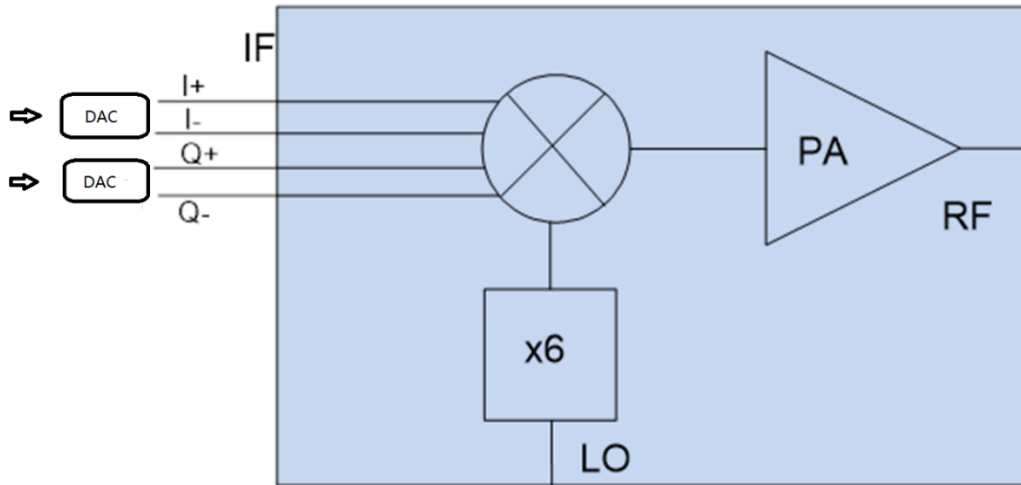
Low Side band suppression



Psat vs Frequency

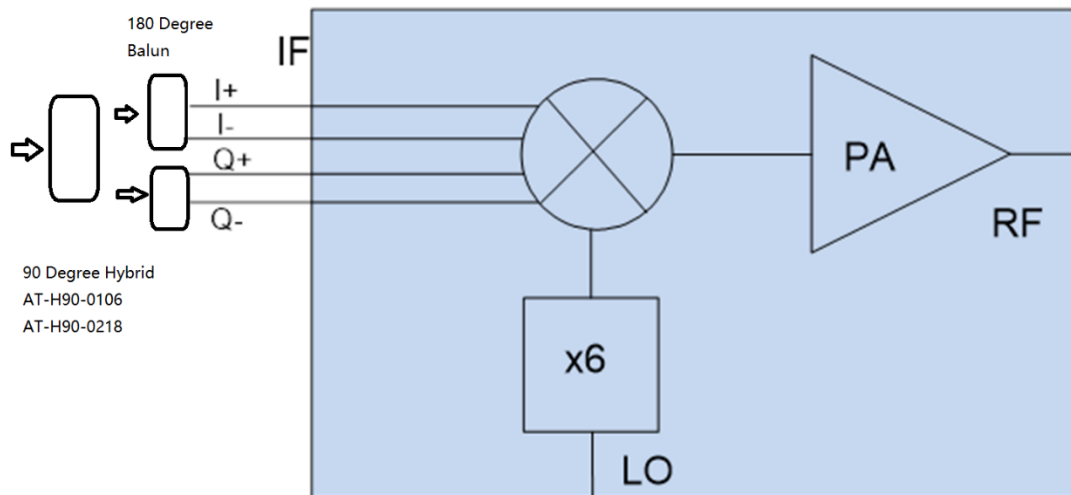


## Applicaiton1:



Zero IF Direct Conversion

## Applicaiton2:



Imaging Rejection Single IF Application

Contact with us for 180degree balun and 90degree hybrid.



### Application Note

Mixer is a three port component with RF, LO and IF ports. Normally, a mixer can be used both up and down converter application. Take up converter for example:

#### General Balance Mixer

For general balance mixer,  $RF=LO \pm IF$ . There will be both high end  $LO+IF$  and Low End  $LO-IF$ . Take for example,  $IF=2GHz$ ,  $LO=60GHz$ , so there will be  $58GHz$  and  $62GHz$  at RF port with same power level.

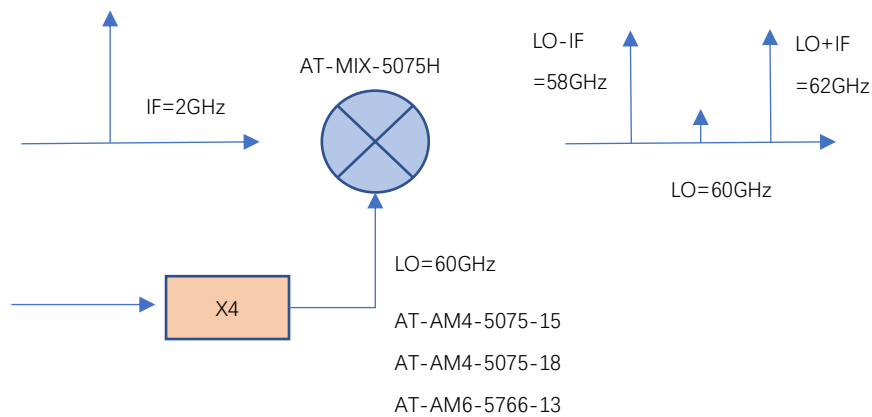


Figure A: General Balance Mixer with Both High and Low Side Output

#### IQ Mixer used as side suppression Mixer

When  $IF=2GHz$ , 90 degree hybrid is used at IF port, when IF applies to Input 1 Port of hybrid, you will have high end frequency  $RF=LO+IF=62GHz$ , while have side suppression (say  $-25dBc$ ) at Low end frequency  $58GHz$ . When you need low end frequency  $58GHz$ , and make side suppression for high end frequency  $62GHz$ , just applies IF to Input 2 of the hybrid.

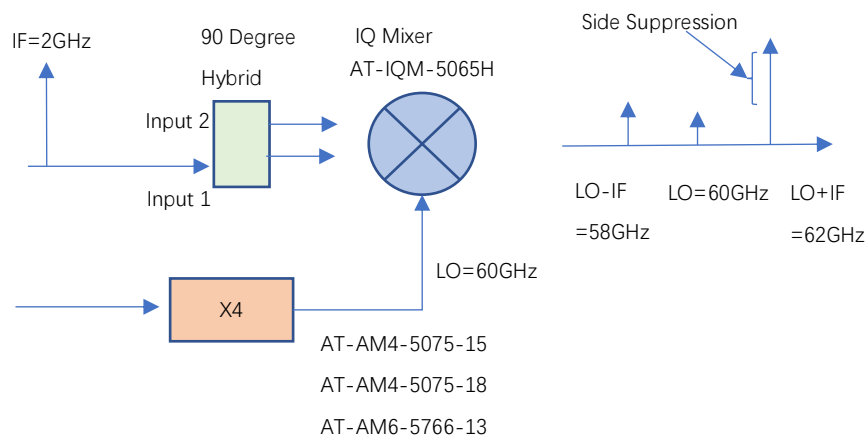


Figure B: IQ Mixer works as side suppression mixer



## Dimension (mm)

