

E Band Transmitter, 66-71GHz



Product Overview

AT-ETX-6671D is a V/E-Band Transmitter, with gain=12dB, Pout=+15dBm typical.

The Tx is integrated with High Performance GaAs MMIC chips. RF frequency range is 66-71GHz, LO range is 9.1-11.83GHz 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-12.

More information, please visit www.atmicrowave.com

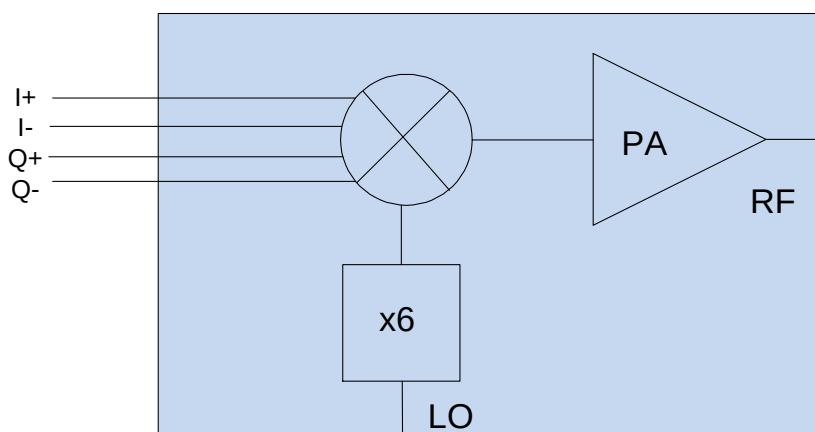
Feature

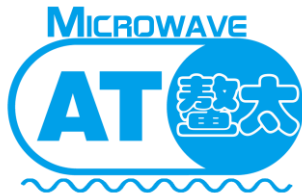
- ✓ Frequency: 66-71GHz
- ✓ Gain: 12dB typical
- ✓ IF Range: DC-10GHz
- ✓ Pout: +17dBm Typical

Application

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

Diagram Block





AT-ETX-6671D

Compact E Band Transmitter, 66-71GHz

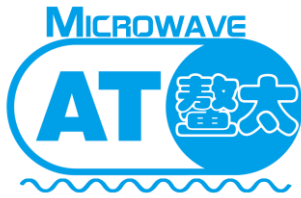
Key Features

Parameter	Min	Typical	Max
RF Frequency		66-71GHz	
IF Frequency		DC-10GHz	
LO Frequency	9.1GHz		11.83GHz
LO Multiplication Factor		X6	
LO Power		+10dBm	
RF P1dB		+13dBm	
Psat		+15dBm	
Conversion Gain (Note1)	8dB	12 dB	
LO to RF Isolation (Note2)		-30dBc	
Band Rejection		-25dBc	
RF Return Loss		-12 dB	
LO Return Loss		-10 dB	
Drain Power Supply		+5/500mA	+8V
Spec Temp		25C	

Note1: Combine I+/-/Q+/- together

Note2: Apply I+/-, Q+/- dc offset for LO Cancellation.





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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

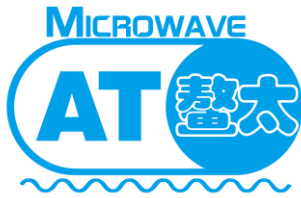
Absolute Maximum Ratings Table

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	-10dBm/ch
Input Frequency	1GHz
LO Power	+10dBm
Temperature	25C

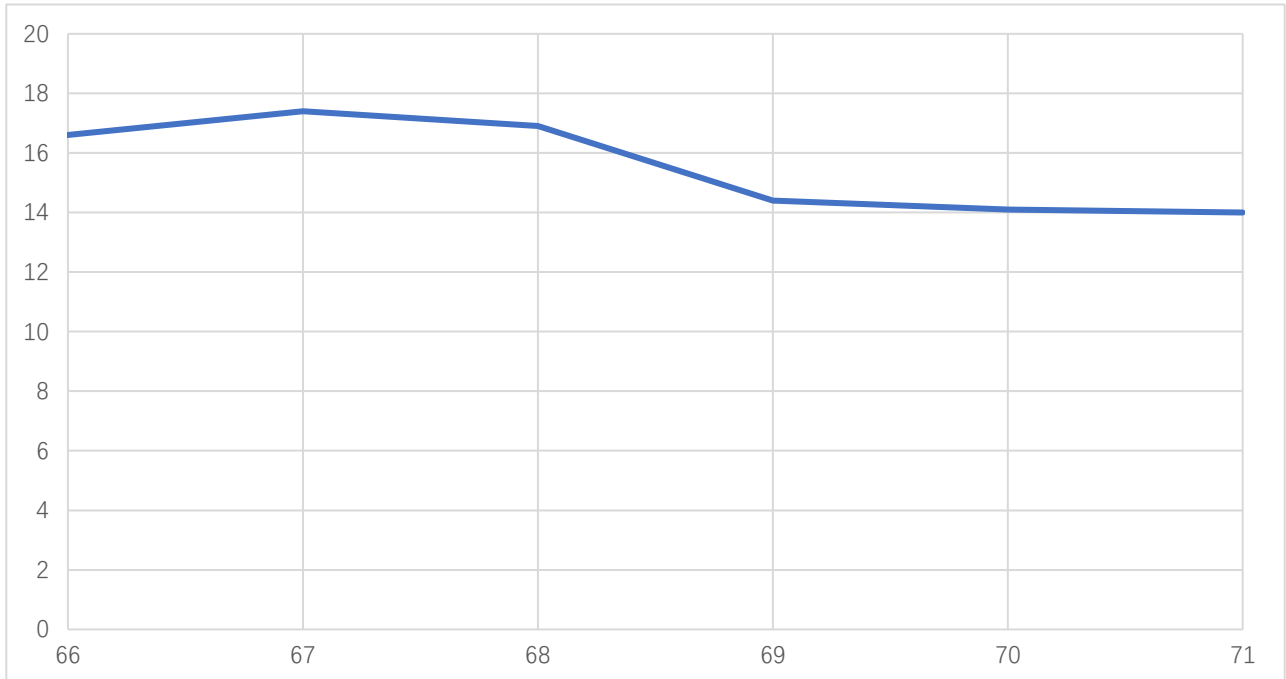




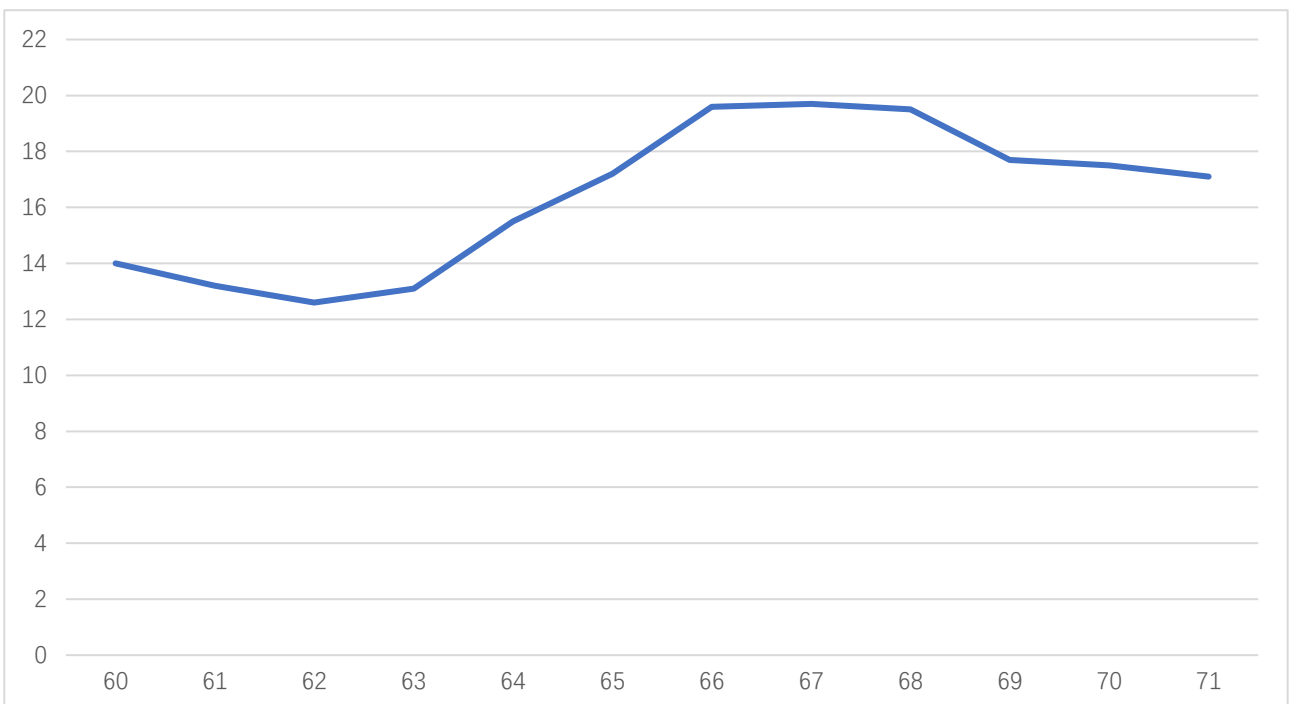
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Test Data (25C)

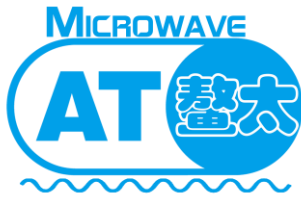


Conversion gain vs Frequency, combined IF together



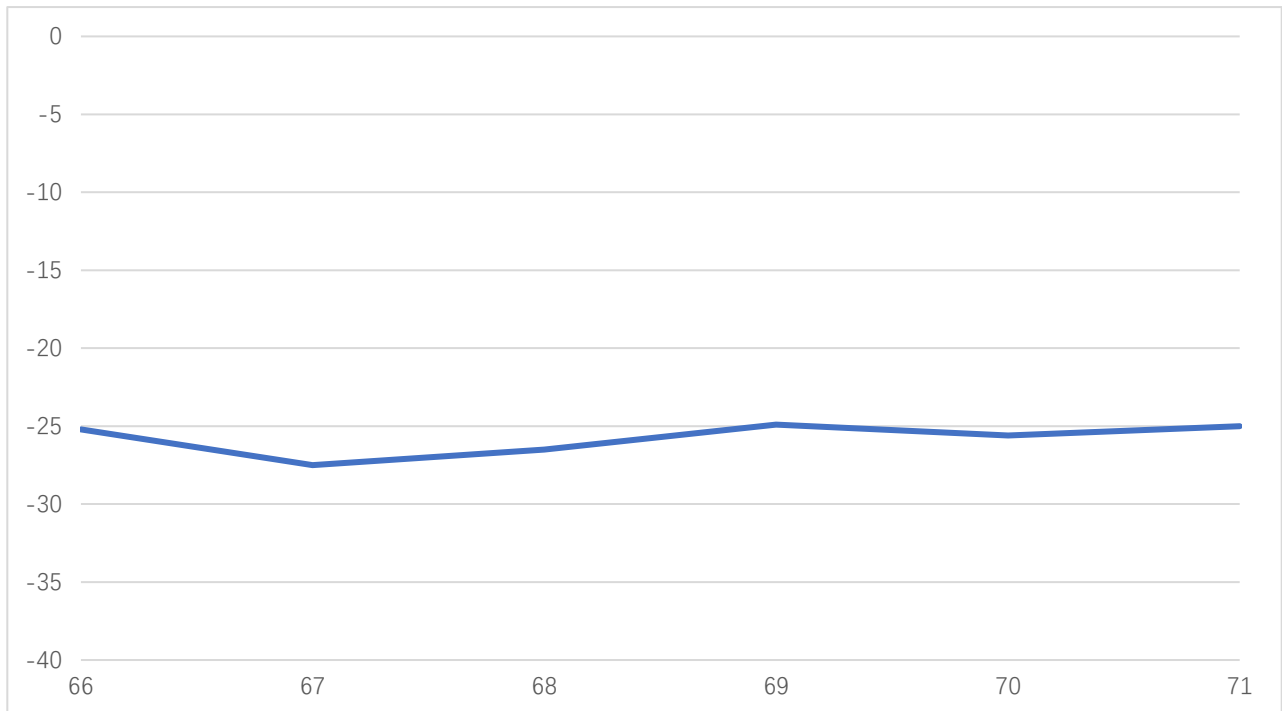
Psat vs Frequency





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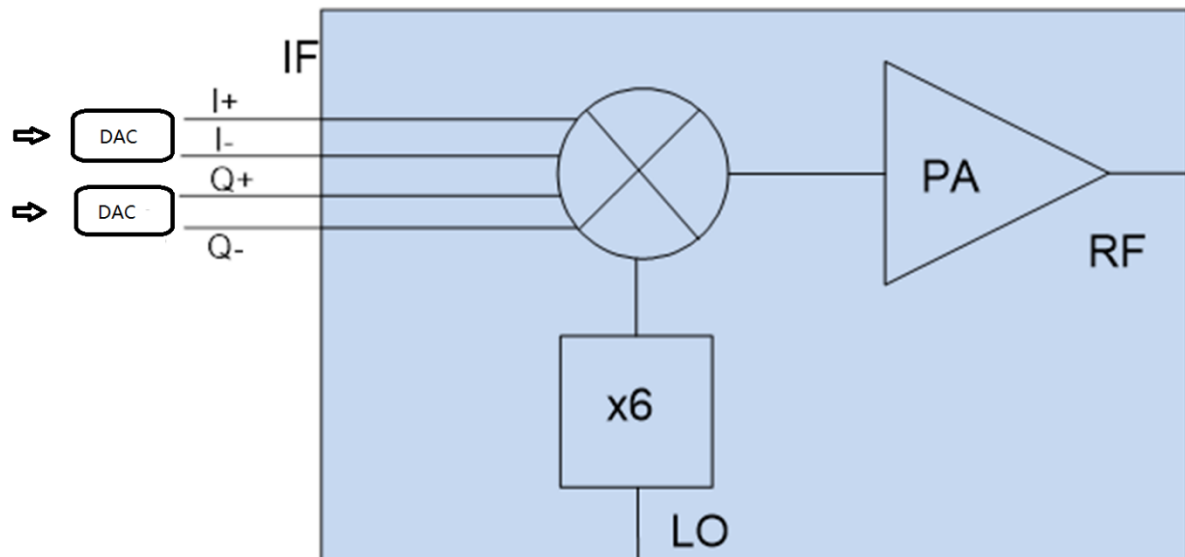
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Low Band Rejection, IF=1GHz

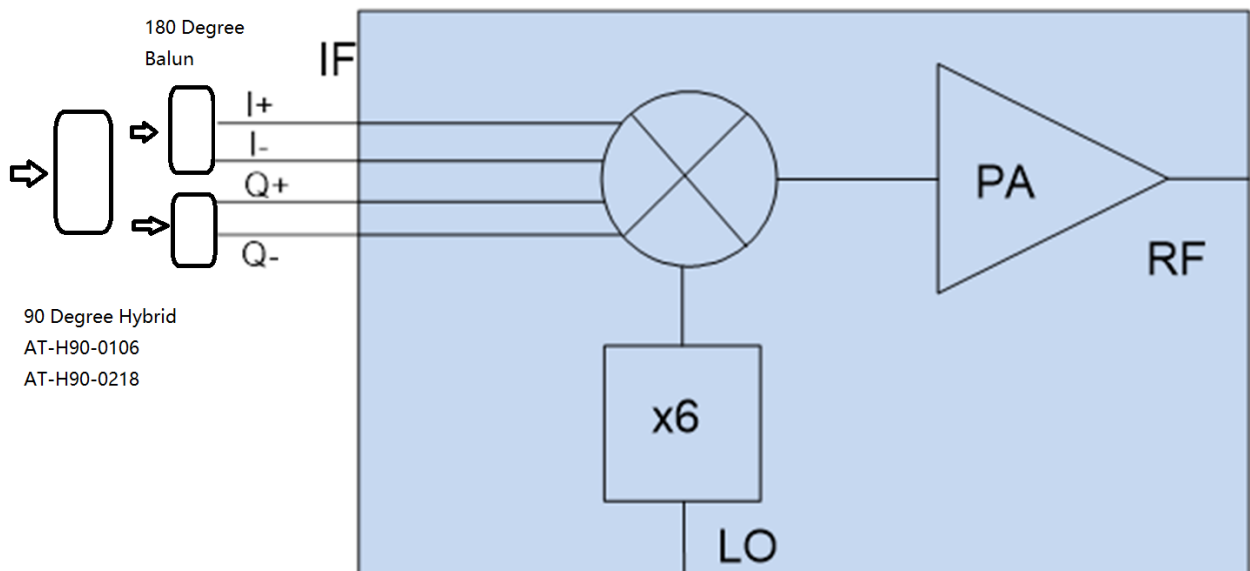


Applicaiton1:



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, $IF = 2GHz$, $LO = 80GHz$, so there will be 78GHz and 82GHz at RF port with same power level.

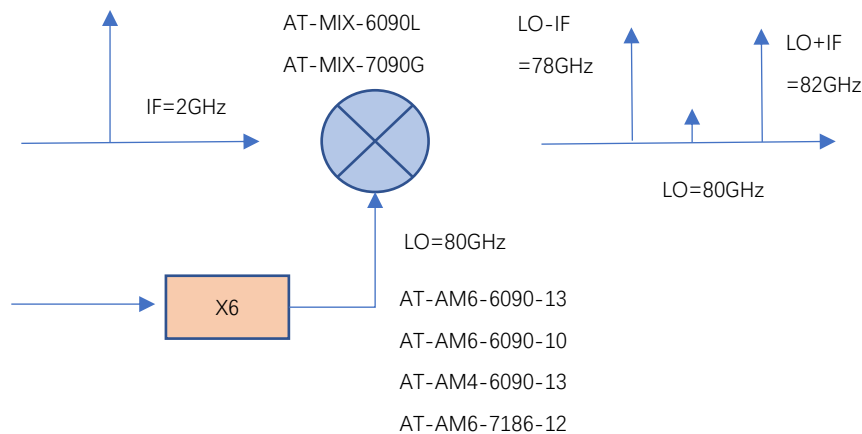


Figure A: General Balance Mixer with Both High and Low Side Output

IQ Mixer used as side suppression Mixer

When $IF = 2GHz$, 90 degree hybrid is used at IF port, and IF applies to Input 1 Port of hybrid, you will have high end frequency $RF = LO + IF = 82GHz$, while have side suppression (say -25dBc) at Low end frequency 78GHz.

When you need low end frequency 78GHz, and make side suppression for high end frequency 82GHz, just applies IF to Input 2 of the hybrid.

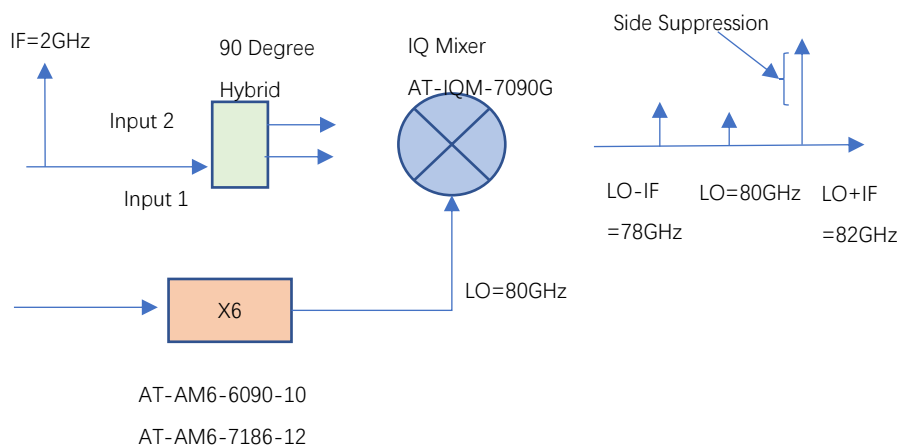


Figure B: IQ Mixer works as side suppression mixer



Dimension (mm)

