

V Band Transmitter, 56-71GHz High Pout +25dBm, WR-15

2025-12-03



Product Overview

AT-VTX-5671-25C1 is a compact V-band transmitter high gain and high power performance.

RF frequency range is 56-71GHz, LO range is 9.3-11.83GHz with x6 times multiplier inside. IF range is DC-16GHz 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

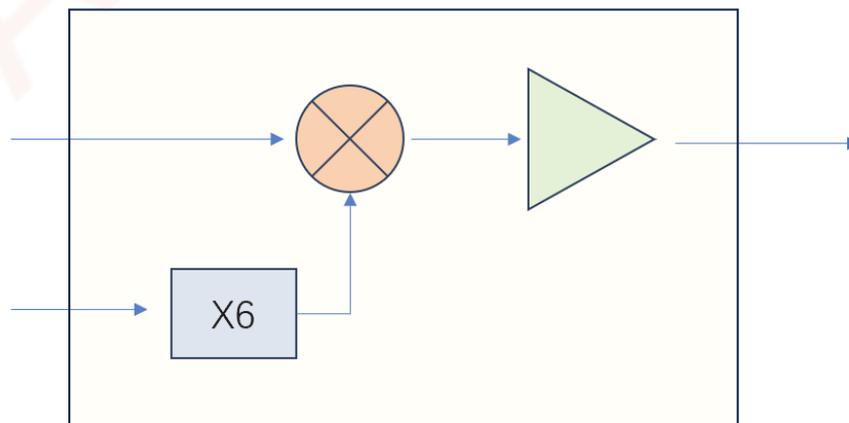
Feature

- ✓ Frequency: 56-71GHz
- ✓ Gain: 25dB typical
- ✓ IF Range: DC-16GHz
- ✓ Pout: +25dBm Typical
- ✓ Single Power Supply

Application

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

Diagram Block





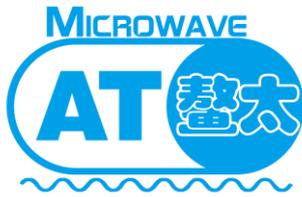
AT-VTX-5671-25C1

Compact V Band Transmitter, 56-71GHz

Key Features

Parameter	Min	Typical	Max
RF Frequency	56GHz		71GHz
LO Frequency	9.5GHz		12GHz
LO Multiplication Factor		X6	
LO Power		+5dBm	+8dBm
IF Range		DC-16GHz	
Conversion Gain (IF to RF)	18dB	23dB	
IF input Damaged Level			+10dBm
P1dB		+23dBm	
Psat		+25dBm	
RF Return Loss		-10 dB	
LO Return Loss		-10 dB	
Power Supply		+5	+8V
Quiescent Current		2.0A	
Current/Psat		2.8A	
Spec Temp		25C	



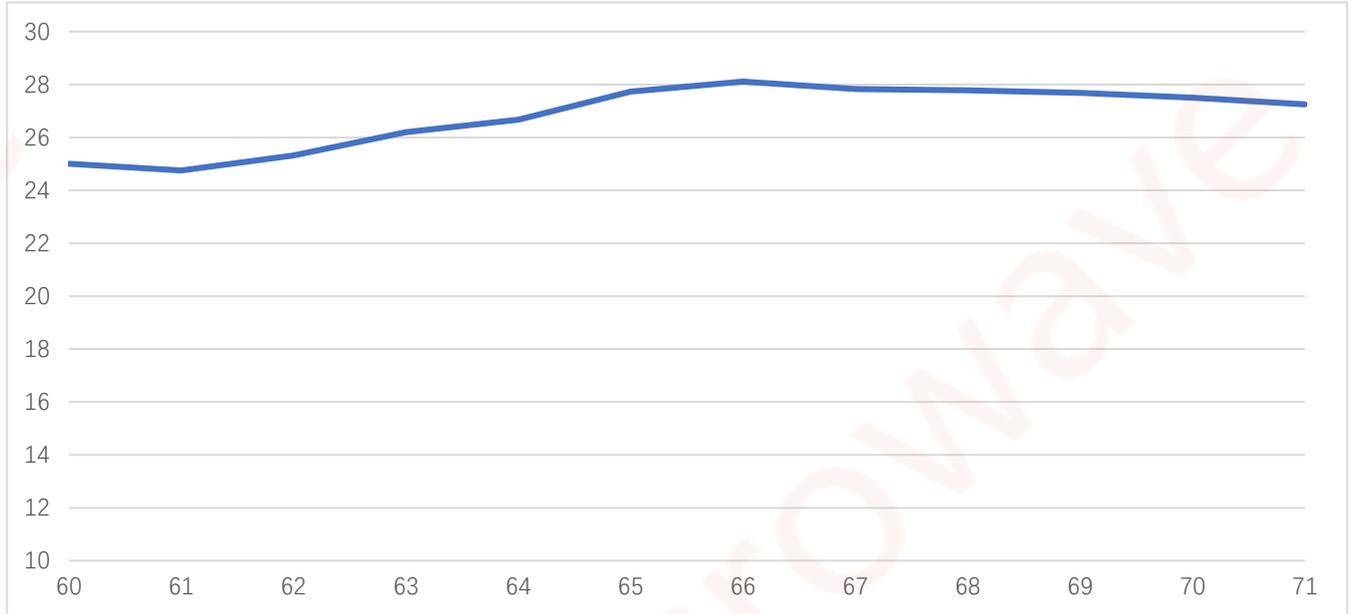


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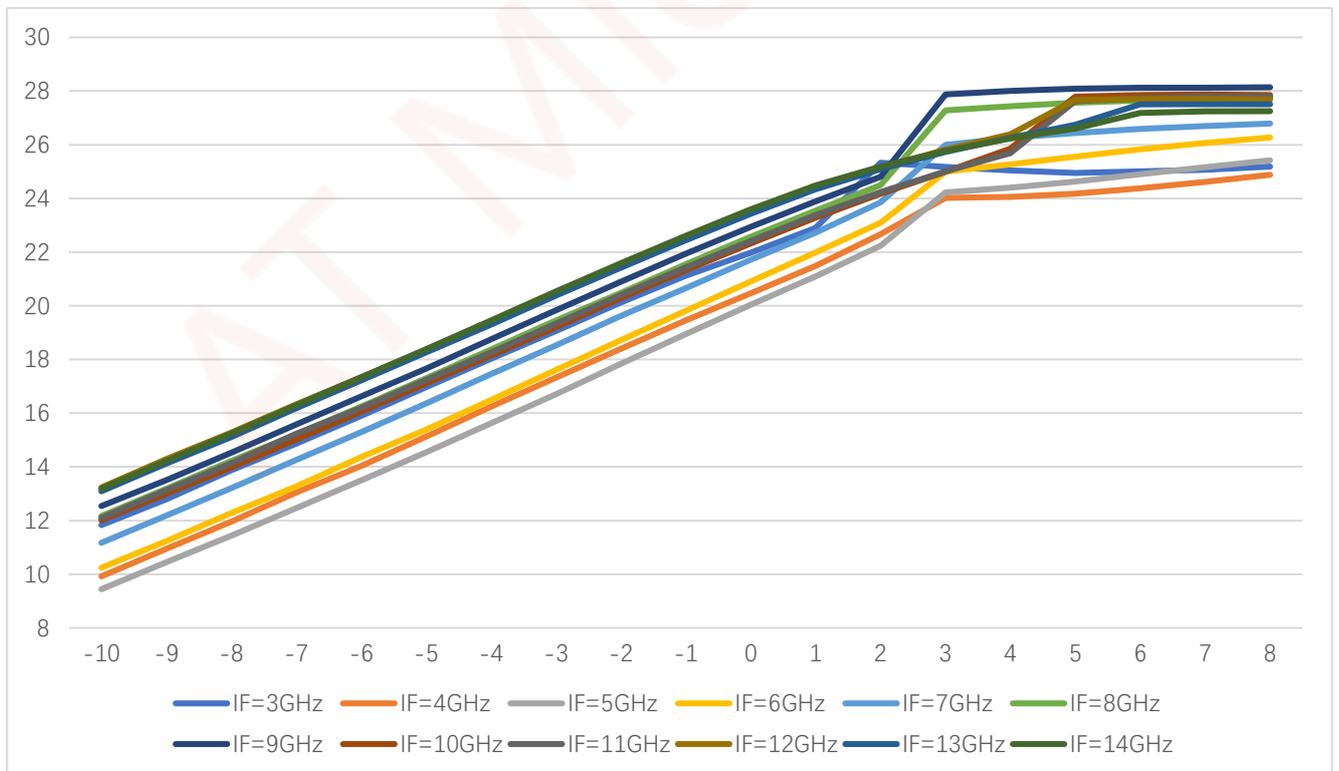
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Test DATA(25C)

Fixed LO=57GHz, AT-HPF-60-15A is used to filter LO and Low-band Side



Pout vs Frequency

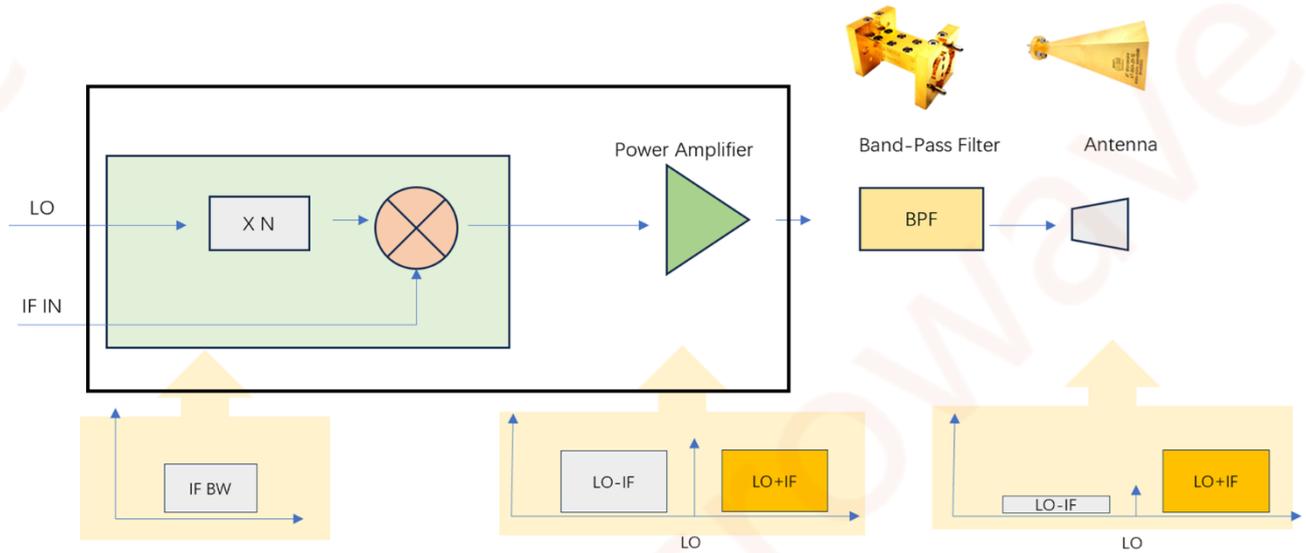


Pout vs Input Power



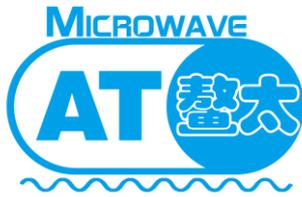
Application Example

Please note that there will be both low side and high side signal after the mixer.
External filter is required if only one side is need.



Tx Communication Link





AT-VTX-5671-25C1

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Mechanical Information

Parameter	Description
RF Port	WR-15 Waveguide with UG-385/U Anti-Cocking Flange
LO Port	SMA Female
IF Port	SMA Female
Case Material (Note)	Copper
Finish	Gold Plated
Weight	tbd
Dimension	See outline

Absolute Maximum Ratings Table

Parameter	Value
IF Power	+10dBm
LO Port	+15dBm
Power Supply	+7V
Operating Temperature	0 to +50C
Storage Temperature	-55 to +125C



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.

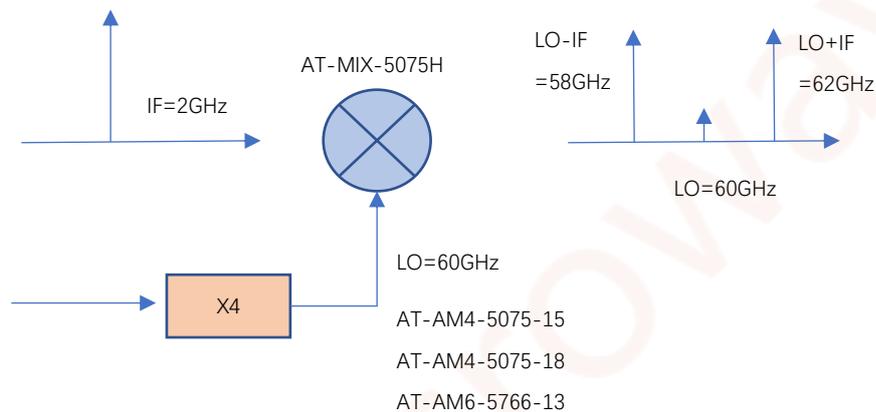


Figure A: General Balance Mixer with Both High and Low Side Output

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.

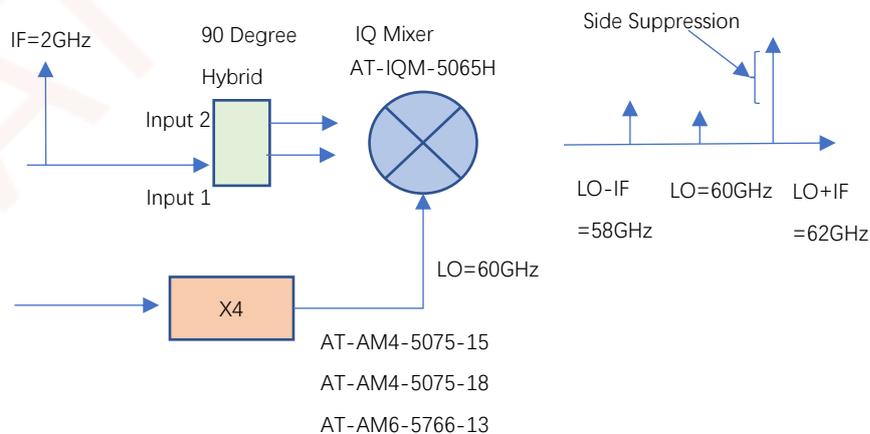
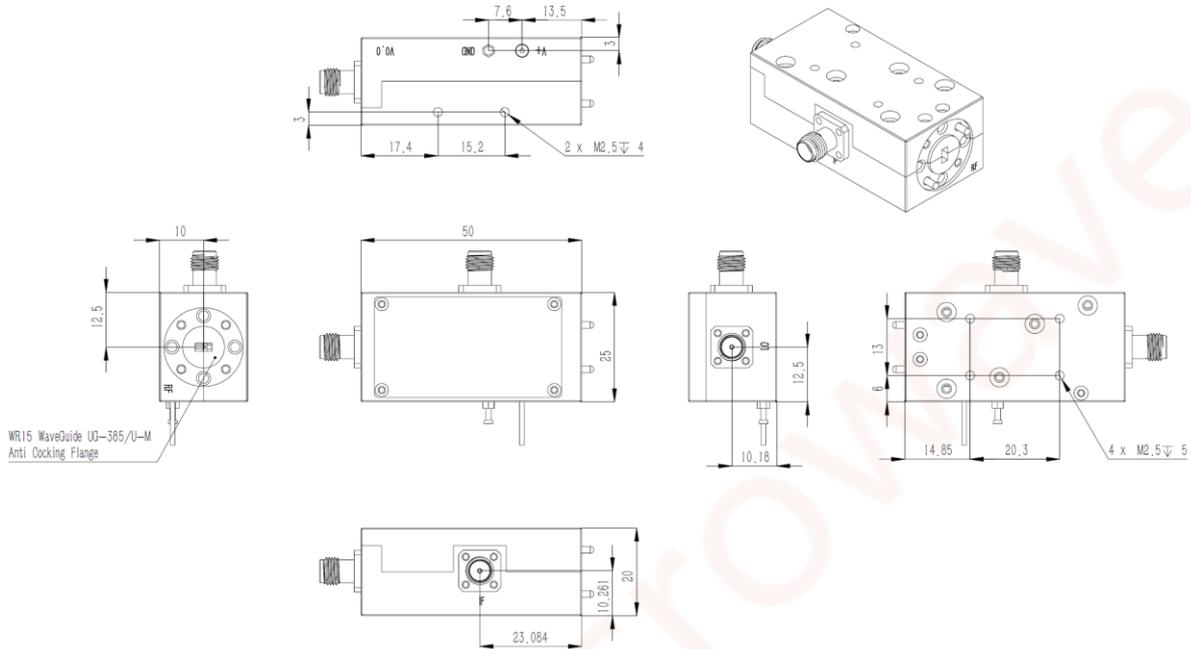


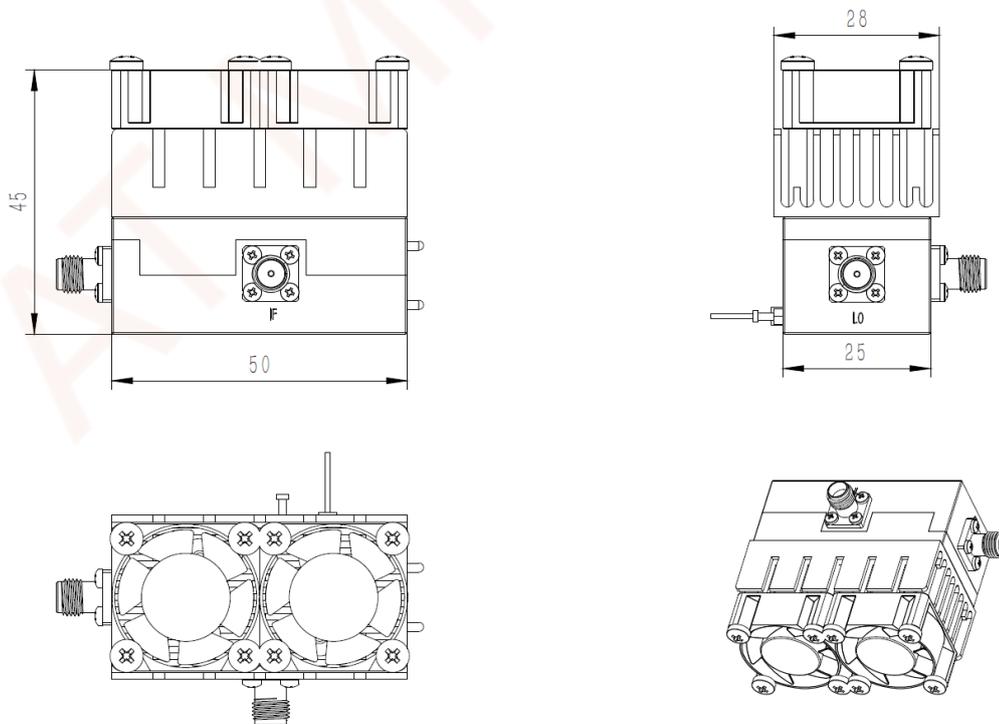
Figure B: IQ Mixer works as side suppression mixer



Dimension (mm)



Heatsink and Fan Required during operation.



AT Microwave provides heatsink and fan in default.
Customer can remove it and use own heatsink system.

