

## W Band Transmitter, 88-104GHz, High Power



### Product Overview

AT-WTX-88104SIF is a single IF W-Band Transmitter. The Tx is integrated with High Performance GaAs MMIC chips. RF frequency range is 88-104GHz, LO range is 10.75-13.25GHz with x8 times multiplier inside. IF range is DC-10GHz with single end port. IQ Port is available according to request.

The Tx Module is with compact size. LO/IF port is with SMA, and RF port is with standard WR-10.

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

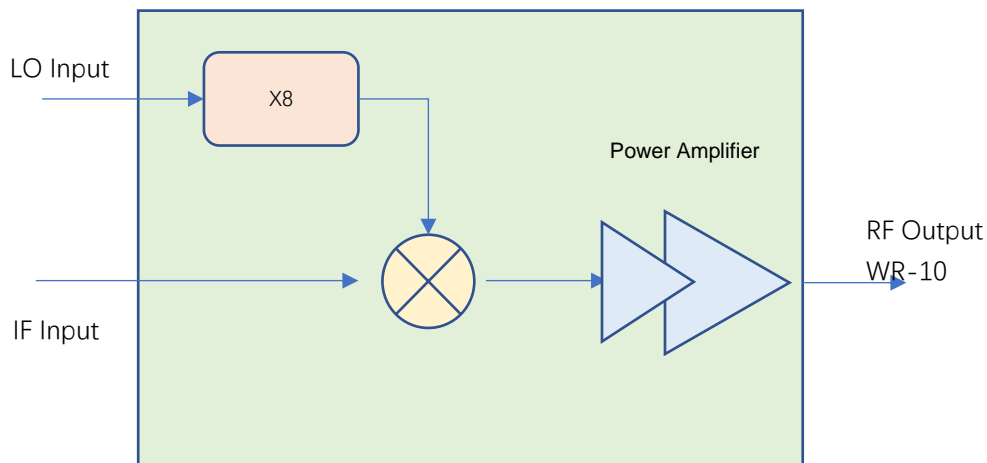
### Feature

- ✓ Frequency: 88-104GHz
- ✓ High Power: +18dBm
- ✓ IF Range: DC-10GHz
- ✓ Single power supply

### Application

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

### Diagram Block





# AT-WTX-88104SIF

W Band Transmitter, 88-104GHz, Pout=+18dBm

## Key Features

Parameter	Min	Typical	Max
RF Frequency		88-104GHz	
IF to RF Conversion Gain	10dB	13dB	
IF Frequency		DC-10GHz	
LO Frequency	10.75GHz		13.25GHz
LO Multiplier Factor		X8	
LO Power	0	+3dBm	+5dBm
Image Rejection (Note)		NO	
P1dB		+15dBm	
Psat		+18dBm	
Power Supply		+5	+8V
Current		0.5A	
Spec Temp		25C	
Operating Temp		0 to 50C	

Note: There will be both low band and high band at RF Port.

## Mechanical Information

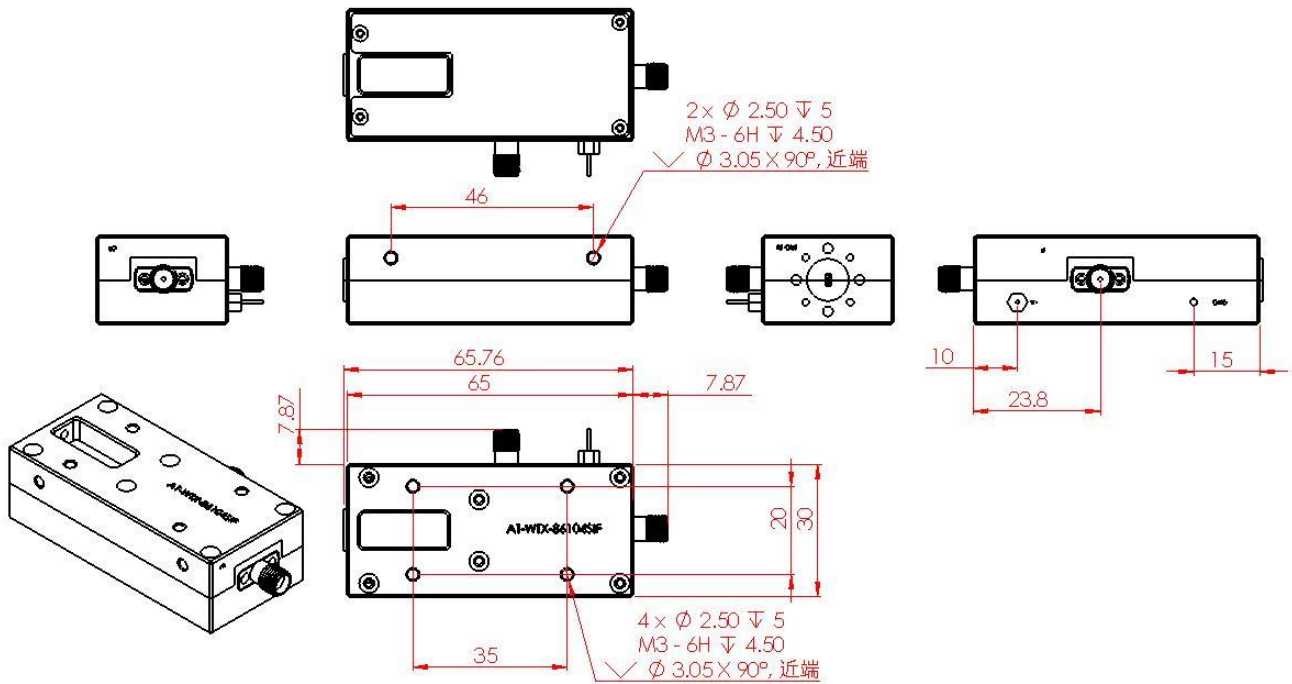
Item	Description
RF Port	WR-10
IF Port	SMA Female
LO Port	SMA Female
Finish	Gold Plated
Weight (Without Heatsink)	225g
Size:	75x40x20mm

## Absolute Maximum Ratings Table

Parameter	Value
Drain Supply 1	+9V
IF Input Power	+7dBm/ch
LO Power	+15dBm
Operating Temperature	0 to +50C
Storage Temperature	-65 to +150C



## Dimension (unit mm)



## 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,  $IF=2GHz$ ,  $LO=94GHz$ , so there will be  $92GHz$  and  $96GHz$  at RF port with same power level.

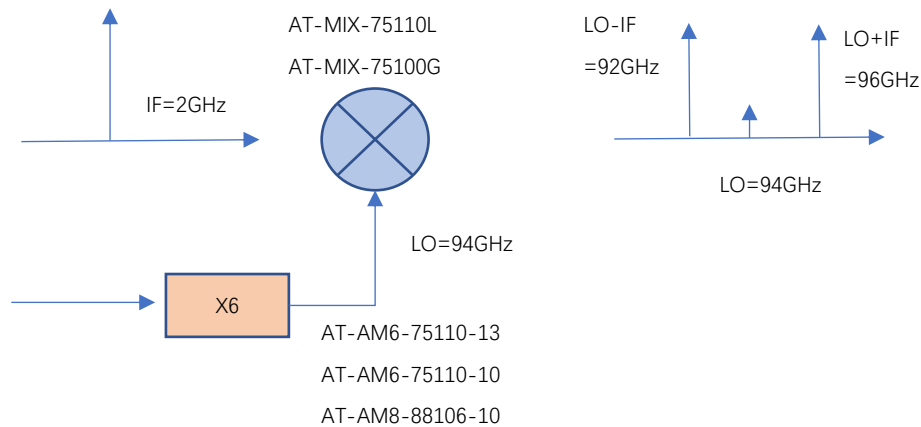


Figure A: General Balance Mixer with Both High and Low Side Output

### 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  $RF=LO+IF=96GHz$ , while have side suppression (say  $-25dBc$ ) at Low end frequency  $92GHz$ .

When you need low end frequency  $92GHz$ , and make side suppression for high end frequency  $96GHz$ , just applies IF to Input 2 of the hybrid.

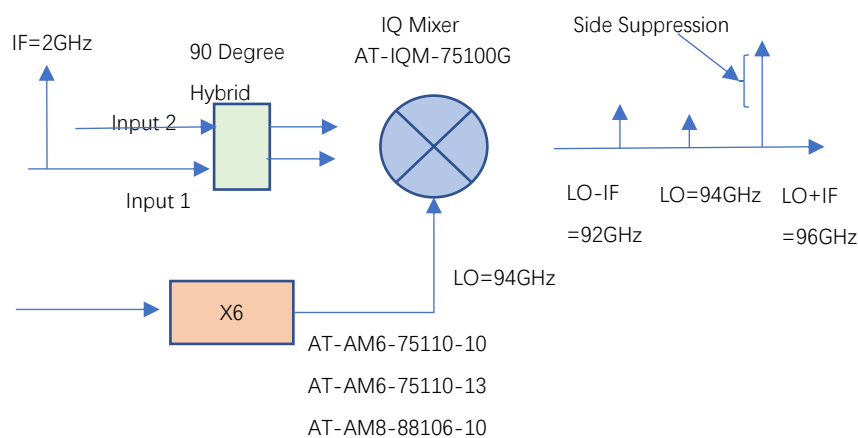


Figure B: IQ Mixer works as side suppression mixer

