

## FMCW Tx/Rx Module, 90-96GHz



### Product Overview

AT-FMCW-9096TR is Tx and Rx module for FMCW application. The Tx channel integrated with X8 Multiplier and Power amplifier at  $P_{out}=+20\text{dBm}$ . The Rx channel is with 20dB gain and 4dB Low NF.

Both IF input port, IQ Output ports are SMA Female, and Tx output and Rx input port are WR-10.

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

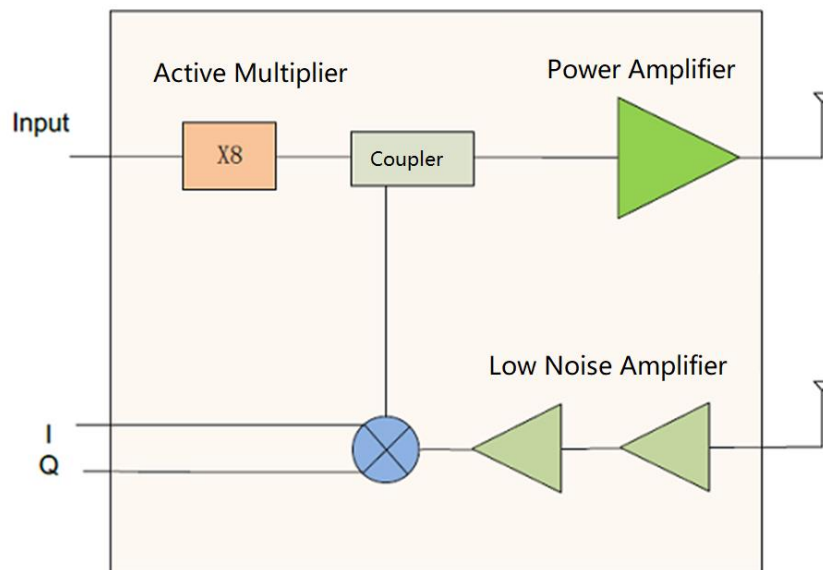
### Feature

- ✓ Frequency: 90-96GHz
- ✓ Tx Pout=+20dBm
- ✓ X8 Multiplier inside
- ✓ Rx NF: 4dB
- ✓ RX Gain: 20dB

### Application

- ✓ FOD Application
- ✓ W Imaging
- ✓ Test Equipment
- ✓ ROF
- ✓ Defense

### Diagram Block





# AT-FMCW-9096TR

W Band Tx and Rx Module

## Tx Spec at 25C

Parameters	Min	Typical	Max
Frequency		90-96GHz	
Output Power	+18	+20dBm	
Multiplier Factor		8	
Input Frequency		11.25-12GHz	
Input Power	0	+5dBm	+8
X7/X9 Harmonics	-18	-30dBc	
Tx Output Port		WR-10	
IF Input Port		SMA Female	

## Rx Spec at 25C (test at IF=1GHz if not specified.)

Parameters	Min	Typical	Max
Frequency		90-96GHz	
RF IN Power		-40dBm	-20dBm
NF		4dB	
RF to IF Gain		20dB	
IF Bandwidth		DC-6GHz	
IQ Amplitude Balance		+/-1dB	3
IQ Phase Balance		+/-5Degree	10
RX Input Port		WR-10	
IQ Output Port		SMA Female	

## DC Characteristic

Parameters	Min	Typical	Max
Vdd		+5V	+12V
Idd (NO RF)		0.6A	
IDD (Psat Output)		0.7A	
Connector		DB9/J30K-9ZKP	

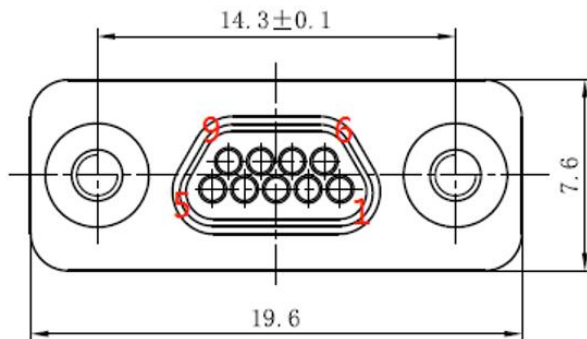


## Absolute Maximum Ratings Table

Parameter	Value
Drain Supply	+13V
Rx Input Power	+0 dBm
Tx IF Input Power	+13dBm
Operating Temperature	-10 to +50C
Storage Temperature	-65 to +150C

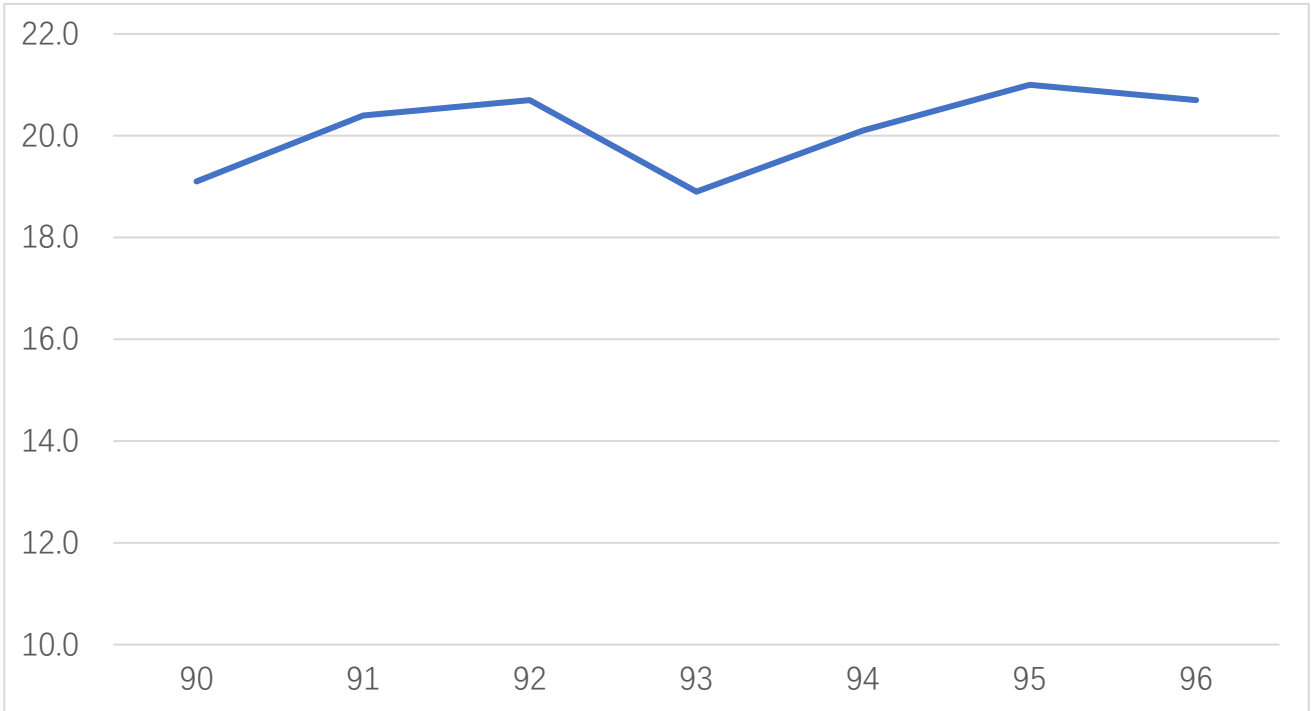
## DB9 (J30-9ZKN)

PIN	Function	Note
1	+5V~12V	Input Power Supply, Pin1/2 connected together inside
2	+5V~12V	Input Power Supply, Pin1/2 connected together inside
3	GND	
4	SDA	Reserved
5	SCL	Reserved
6-9	NC	



## Tx Test Data

IF=11.25-12GHz, Pin=+5dBm, 25C



Tx Pout vs Frequency, Pin=+5dBm

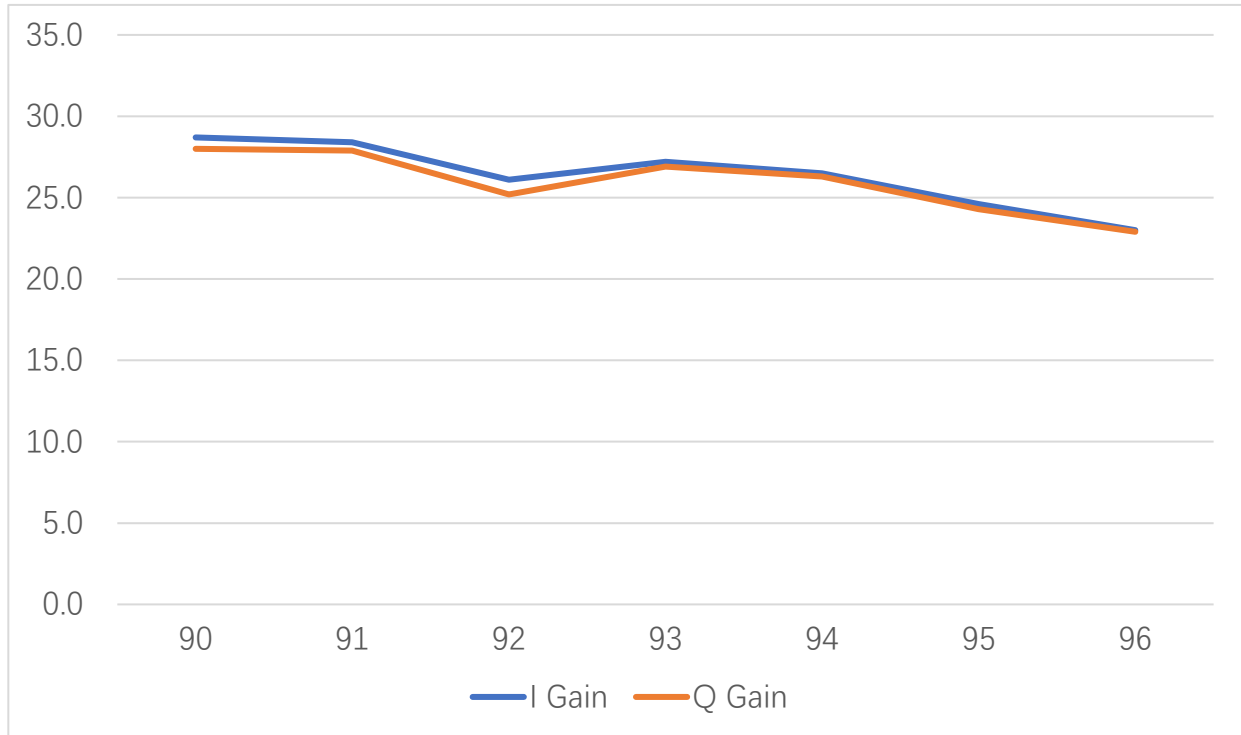


X7/X9 Harmonics vs X8 Pout

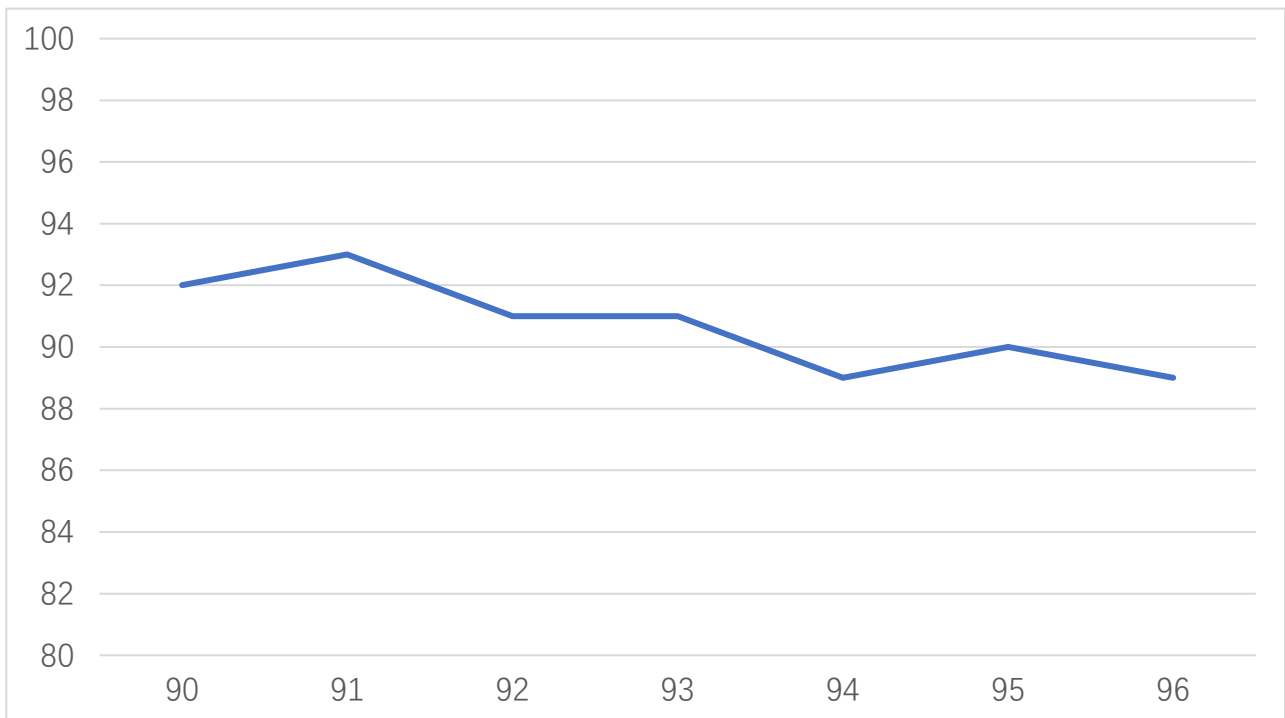


## Rx Test

RF Input Power=-40dBm, IF=1GHz, 25C

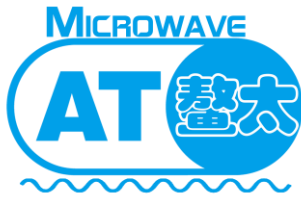


Rx I/Q Gain vs Frequency



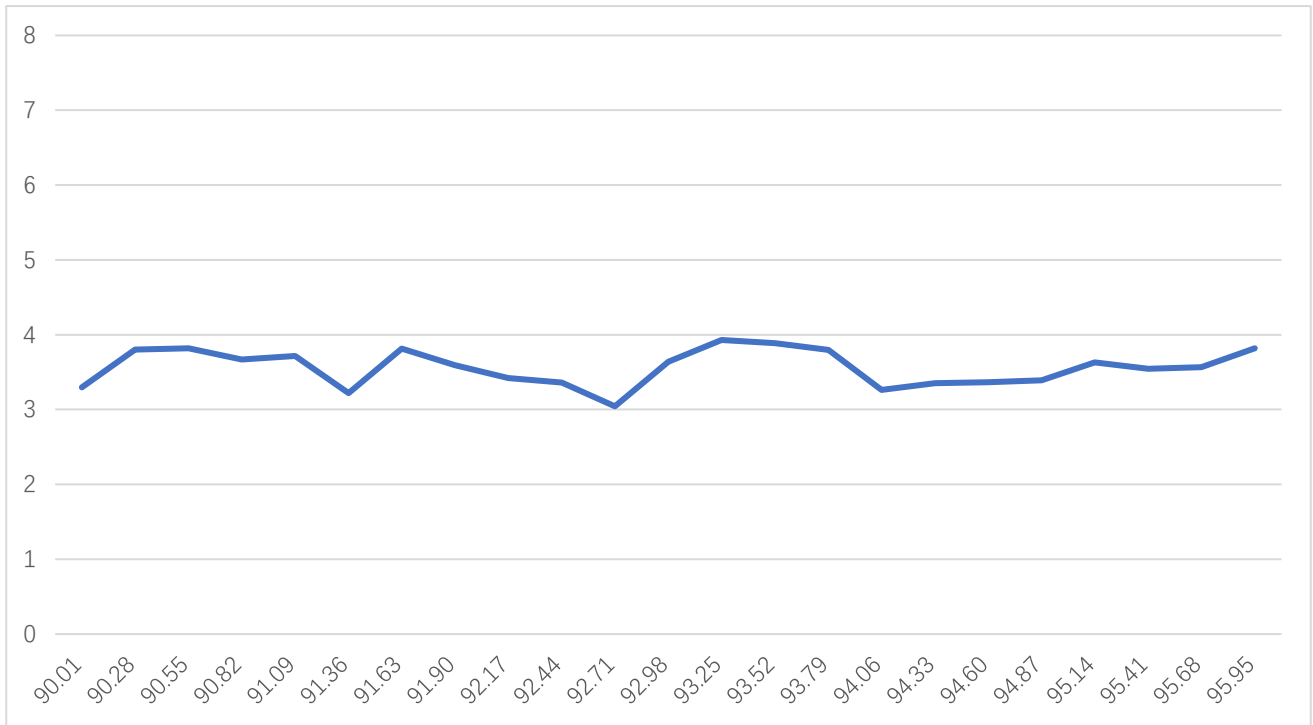
IQ Phase Balance





# AT-FMCW-9096TR

W Band Tx and Rx Module



RX NF Test vs Frequency



### Dimension (mm)

