

18-44GHz Up-Converter, IF IQ Input Bench-top Test Equipment, 2.92mm



Product Overview

AT-BTIQUC4-1844R is 18-44GHz Up-converter with X4 frequency multiplier inside, The Up converter IF-RF gain is 5dB.

The RF Port is with standard 2.92mm. LO input port and IF input port are SMA Female. There are I and Q ports for the IF input. External hybrid can be used to achieve single side suppression.

More information, please visit www.atmicrowave.com

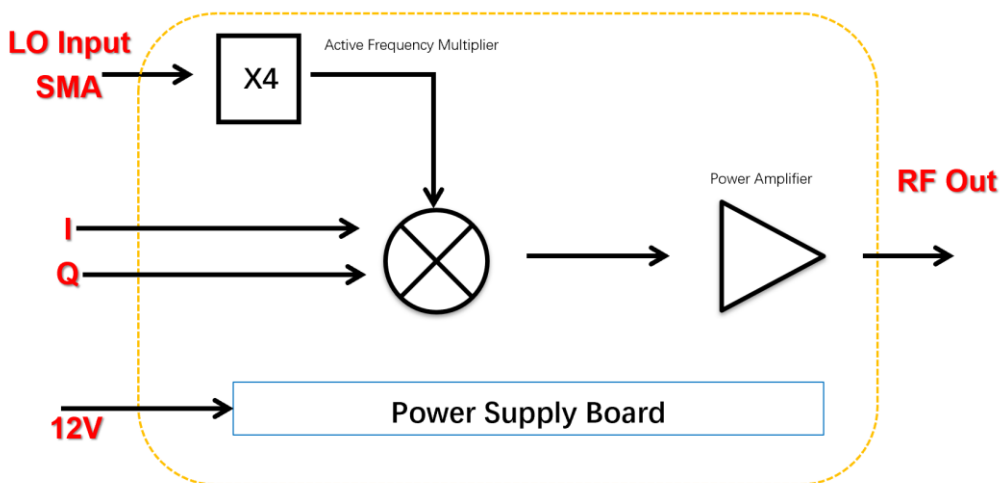
Advantages

- ✓ Frequency: 18-44GHz
- ✓ Gain: 15dB
- ✓ IF: 50kHz-20GHz
- ✓ LO X4 inside
- ✓ Bench-Top Labs Test

Application

- ✓ 5G Communication
- ✓ ROF (RF Over Fiber)
- ✓ Radar System
- ✓ RCS Test

Diagram Block:





AT-BTIQUC4-1844R

Bench-Top 18-44GHz Up-Converter

Key Features

| Parameter | Min | Typical | Max |
|-----------------------------------|--------|---------------|--------|
| RF Frequency | 18GHz | | 50GHz |
| LO Frequency | 4.5GHz | | 11GHz |
| LO Multiplier Factor | | X4 | |
| LO Driver | +10dBm | +13dBm | +15dBm |
| IF IQ Frequency | | 50kHz-20GHz | |
| IF-RF Gain | | 5dB | |
| IF Port Input P1dB | | +8dBm | |
| RF Port Output P1dB | | +13dBm | |
| Side Suppression (Note1) | | -25dB | |
| RF Port Return Loss | | -10dB | |
| IF Port Return Loss | | -10dB | |
| Power Supply (with AC/DC Adapter) | +90V | +220V | +260V |
| RF Port | | 2.92mm Female | |
| LO Port | | SMA Female | |
| IF Port | | SMA Female | |

Note1: Depends on the external 90degree hybrid. Contact us for more information.

Notes:

1. Datasheet may be changed according to update of MMIC, Raw materials , process, and so on.
2. This data is only for reference, not for guaranteed specifications.
3. Please contact AT Microwave team to make sure you have the most current data.





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Bench-Top 18-44GHz Up-Converter

Mechanical Information:

| Parameter | Value |
|----------------|--|
| RF Port | 2.92mm Female |
| LO/IF Port | SMA Female |
| DC Bias | +12V Supply, AC to DC Power Converter included |
| DC Bias Switch | ON-OFF switch with light indicator |
| Dimension | 204x127x74.6mm |

Absolute Maximum Ratings Table

| Parameter | Value |
|-----------------------|-------------|
| AC Supply | +260V |
| IF Input Power | +13dBm |
| LO Port Power | +18dBm |
| Operating Temperature | 0 to 50 C |
| Storage Temperature | -45 to +85C |



Application Note

Mixer is a three ports 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, $IF=2GHz$, $LO=40GHz$, so there will be $38GHz$ and $42GHz$ at RF port with same power level.

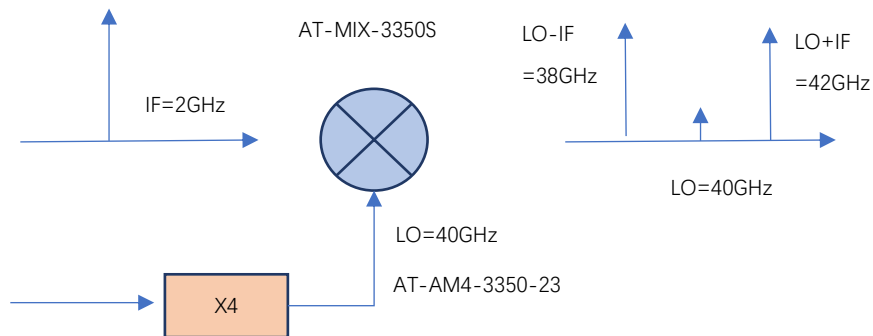


Figure A: General Balance Mixer with Both High and Low Side Output

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 $RF = LO + IF = 42GHz$, while have side suppression (say $-25dBc$) at Low end frequency $38GHz$. When you need low end frequency $38GHz$, and make side suppression for high end frequency $42GHz$, just applies IF to Input 2 of the hybrid.

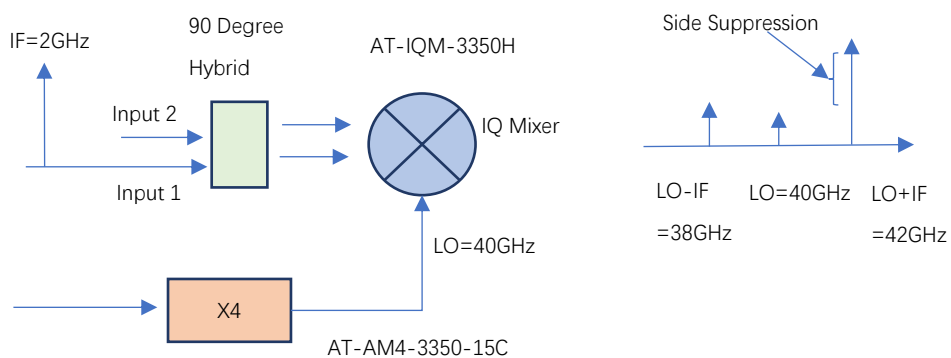


Figure B: IQ Mixer works as side suppression mixer





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Bench-Top 18-44GHz Up-Converter

Dimension: (TBD)

