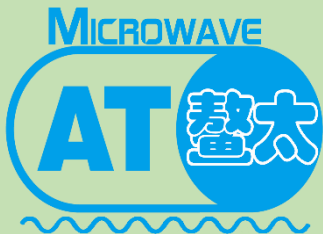


U Band (40-60GHz) Highlight Products

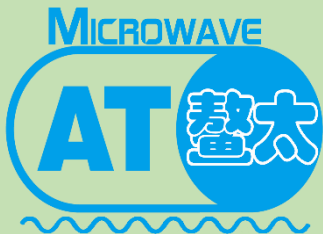
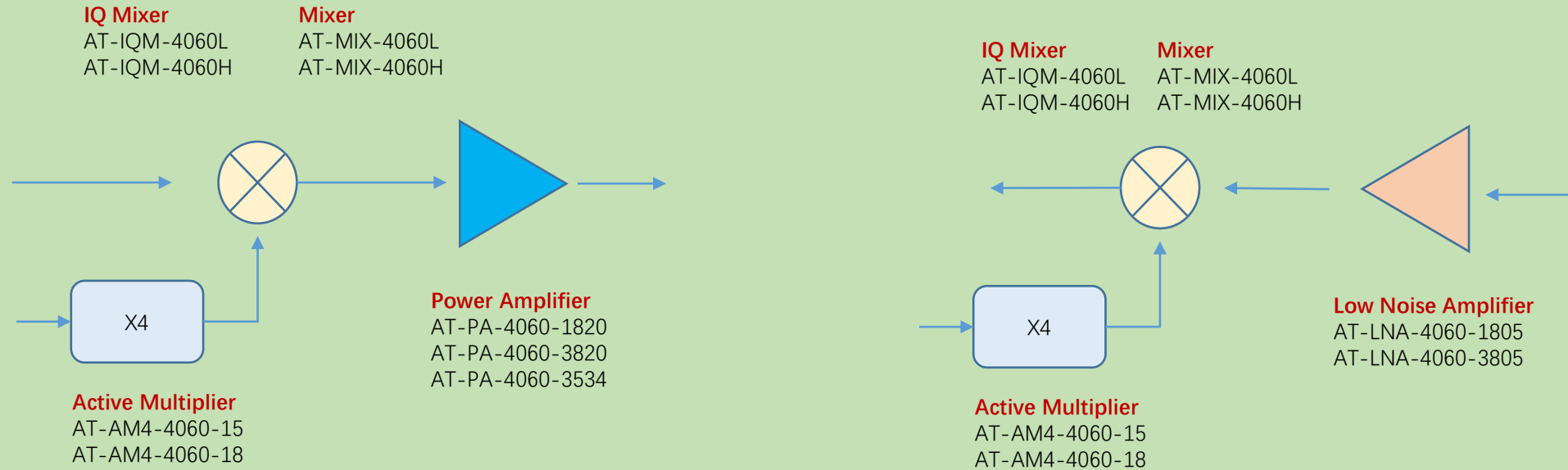
Shanghai AT Microwave Ltd.
sales@atmicrowave.com

Products Lines

1. Low Noise Amplifier
2. Power Amplifier
3. Frequency Multiplier
4. Mixer/IQ Mixer
5. Compact Tx/Rx module
6. Waveguide Filter
7. Oscillators
8. Adapter
9. Test Equipment



U BAND Waveguide Solution 40-60GHz

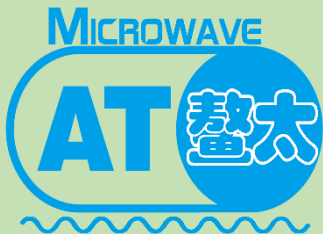
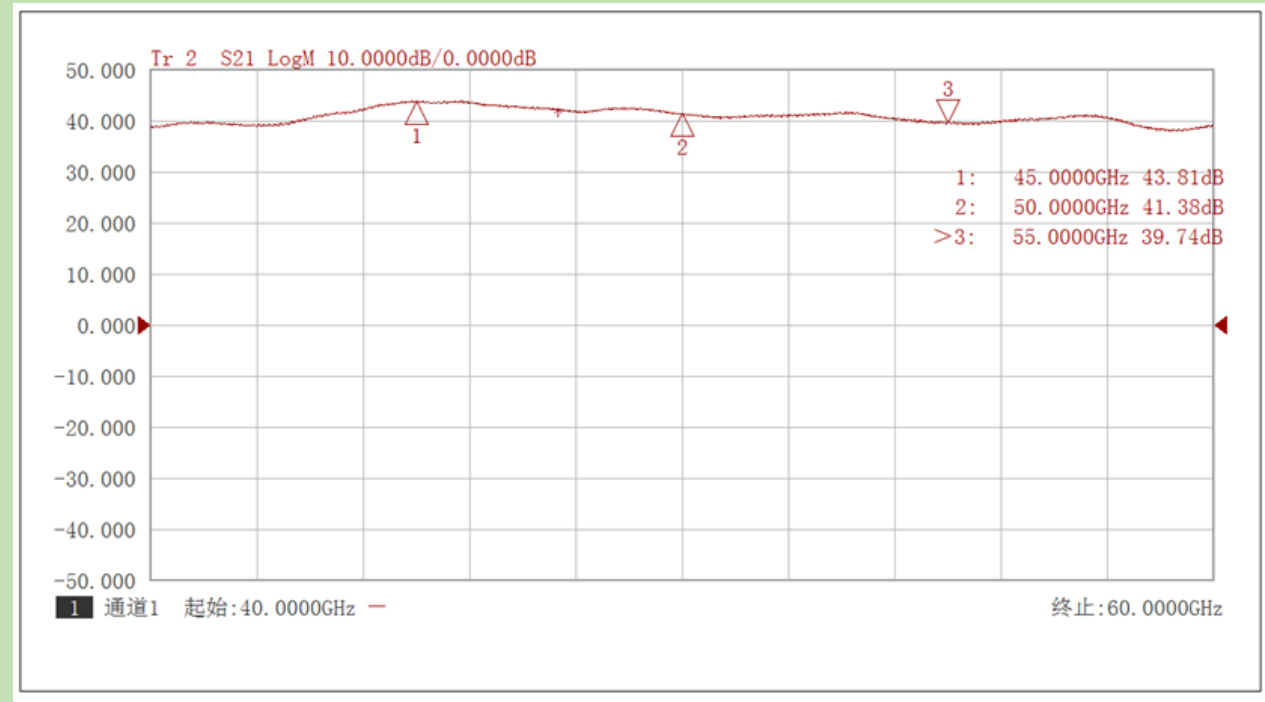
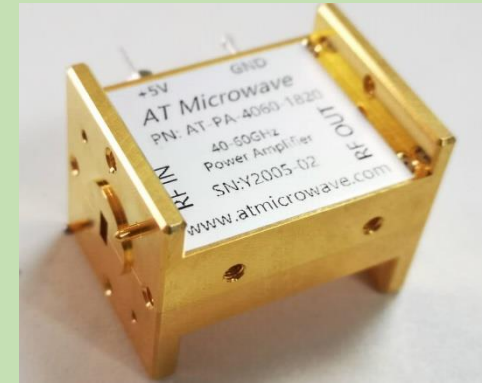


1. Low Noise Amplifier

PN: AT-LNA-4060-1805
AT-LNA-4060-3805

Advantages

- Frequency: 40-60GHz
- High Gain: 18/38dB
- NF: 5dB
- WR-19

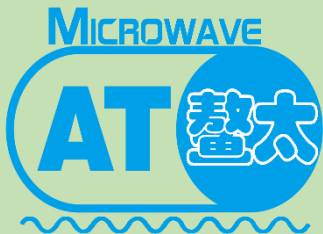
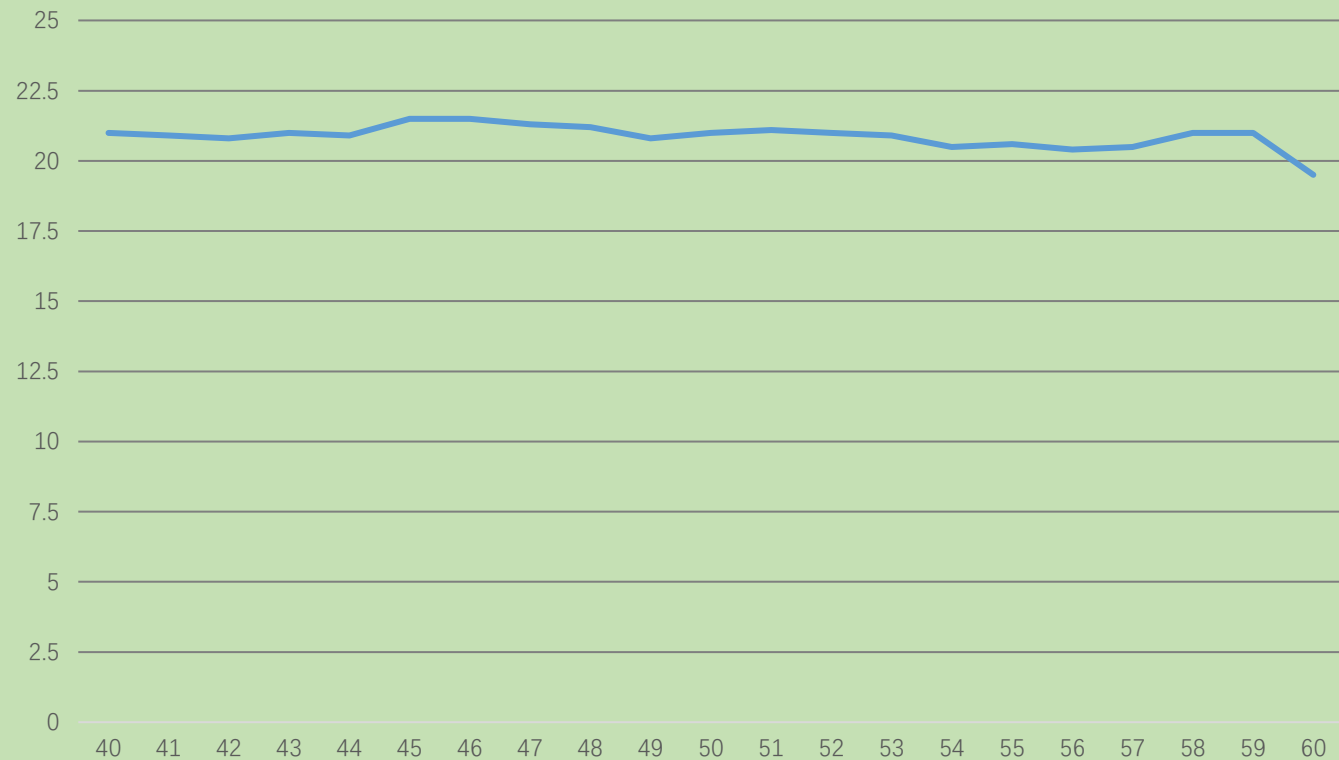


2. Power Amplifier

PN: AT-PA-4060-1820
AT-PA-4060-3820

Advantages

- Frequency: 40-60GHz
- High Gain: 18dB
- Pout= +20dBm
- Single Supply

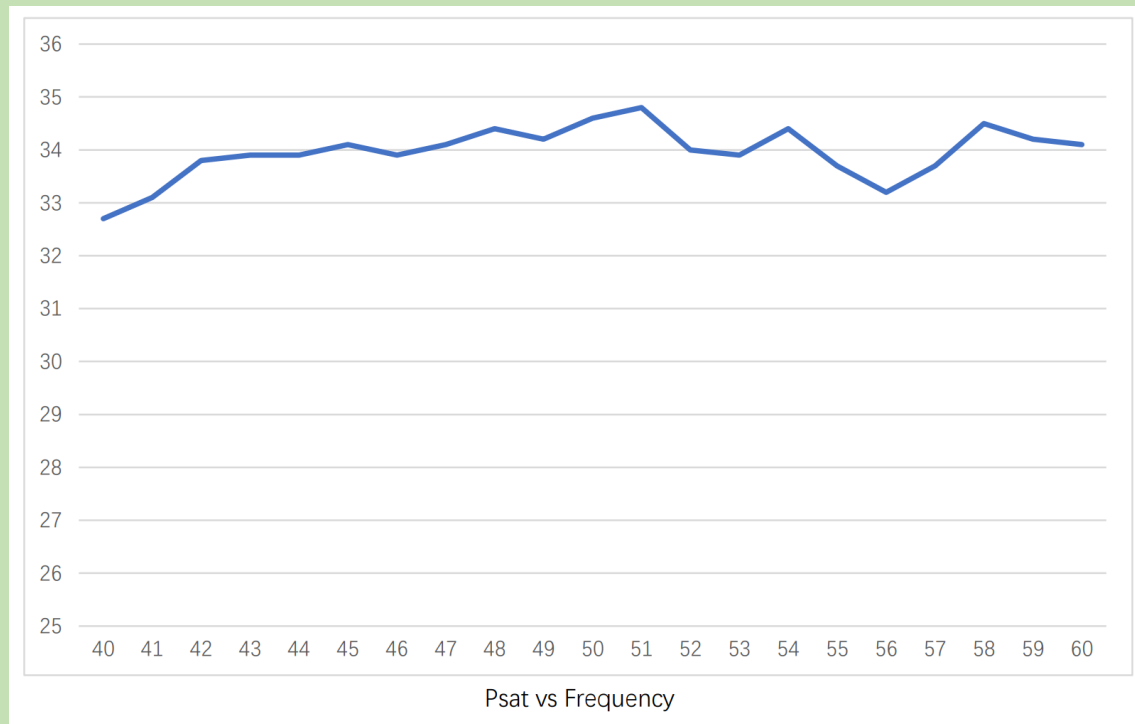
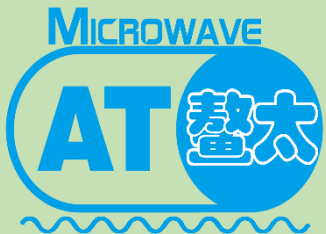


2. Power Amplifier

PN: AT-PA-4060-3034

Advantages

- Frequency: 40-60GHz
- High Gain: 30dB
- Pout: +34dBm
- WR-19

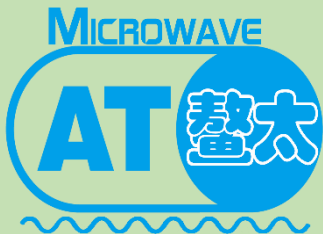
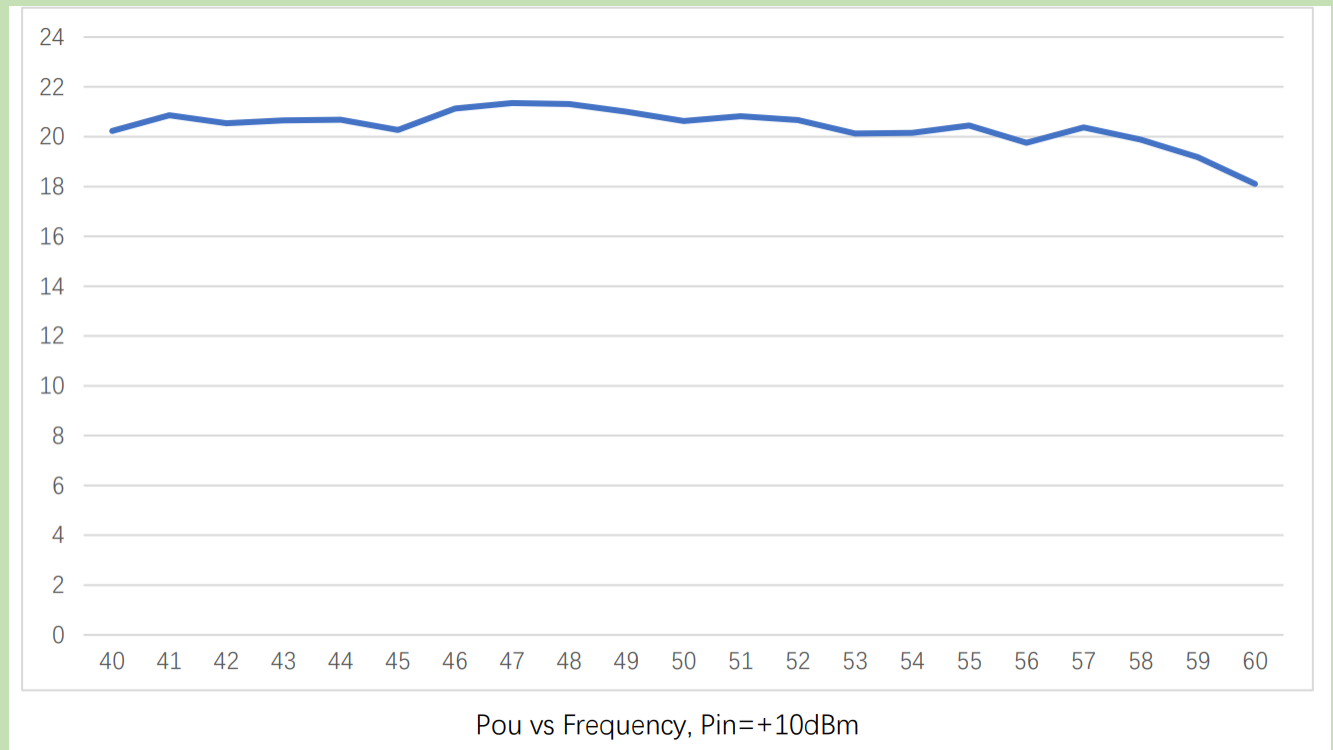


3. Full band Active Frequency Multiplier

PN: AT-AM4-4060-15
AT-AM4-4060-18

Feature

- Frequency: 40-60GHz
- Pout: +18dBm typical
- Input: 10-15GHz
- Low Harmonics

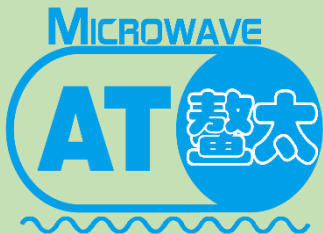
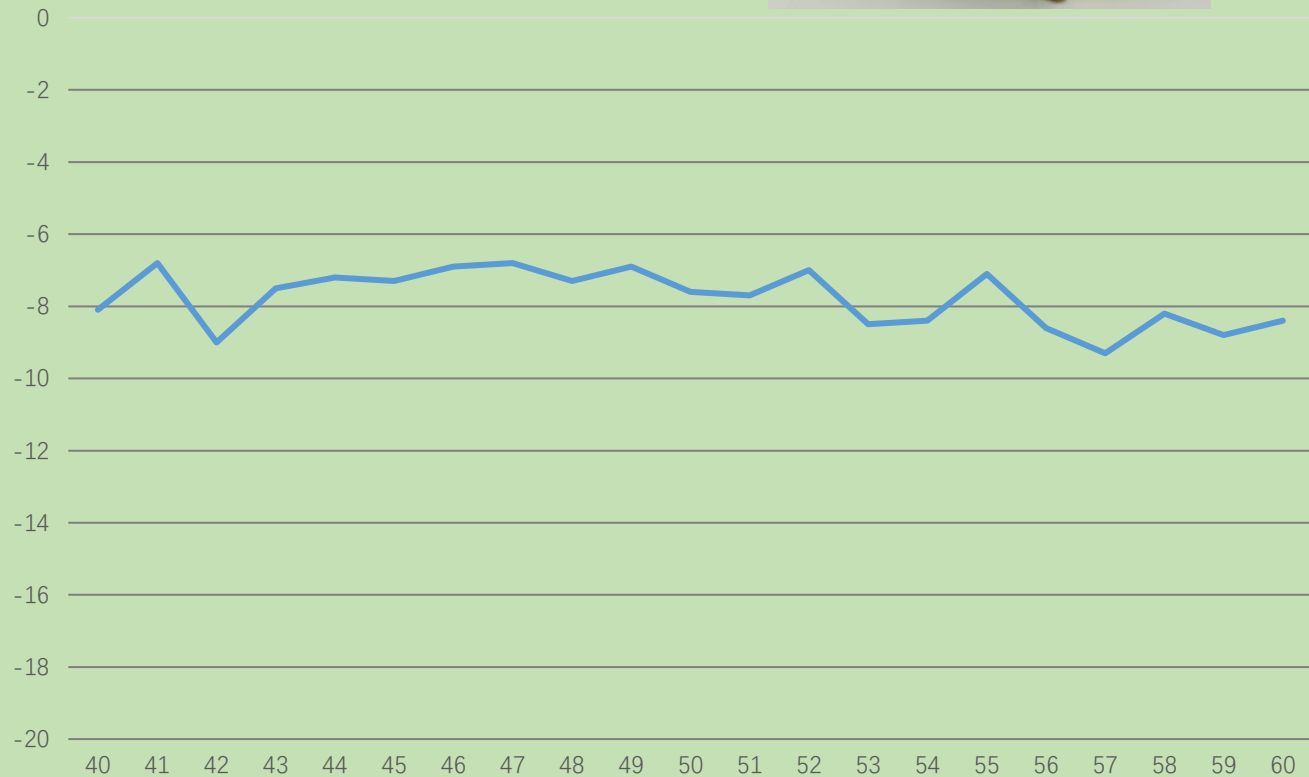
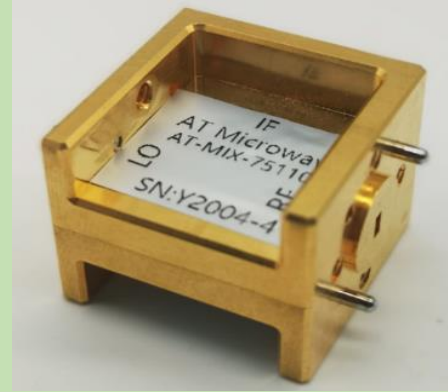


4. Balance Mixer-waveguide

PN: AT-MIX-4060L
AT-MIX-4060H

Feature

- RF/LO: 40-60GHz
- IF: DC-18GHz
- Low Conversion Loss
- Low LO power requirement
- High RF/LO Isolation



4. Balance Mixer-integrated with LO Chain

PN: AT-4MIX-4060H

Feature

- RF: 40-60GHz
- LO: 10-15GHz
- IF: DC-18GHz
- Low Conversion Loss
- Low LO power requirement
- High RF/LO Isolation

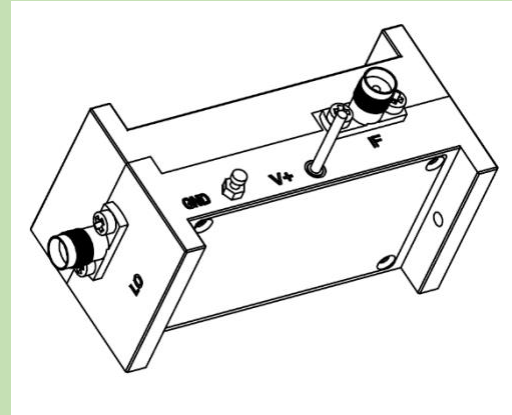
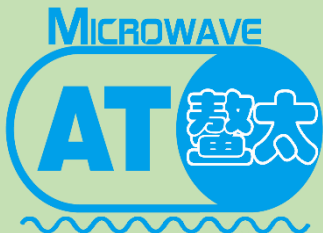
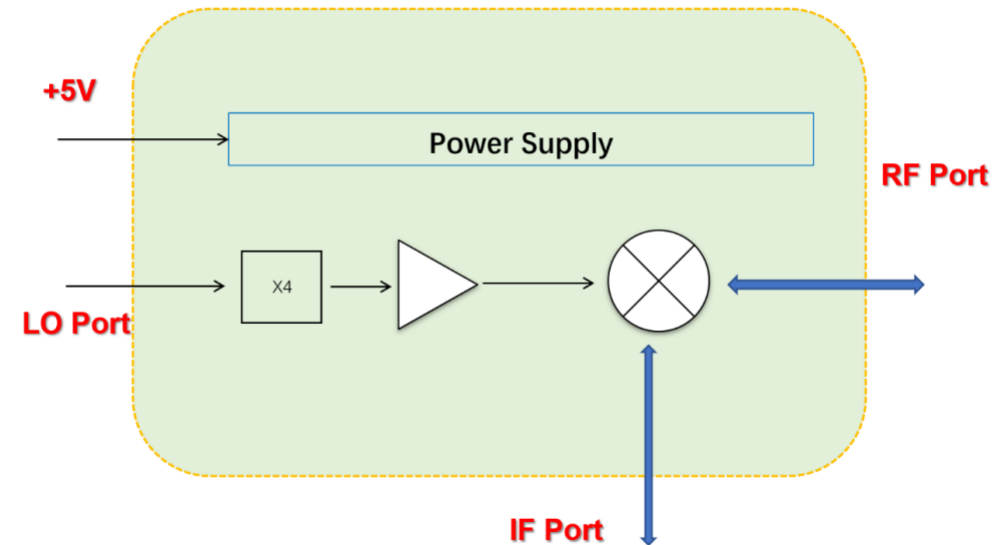


Diagram Block



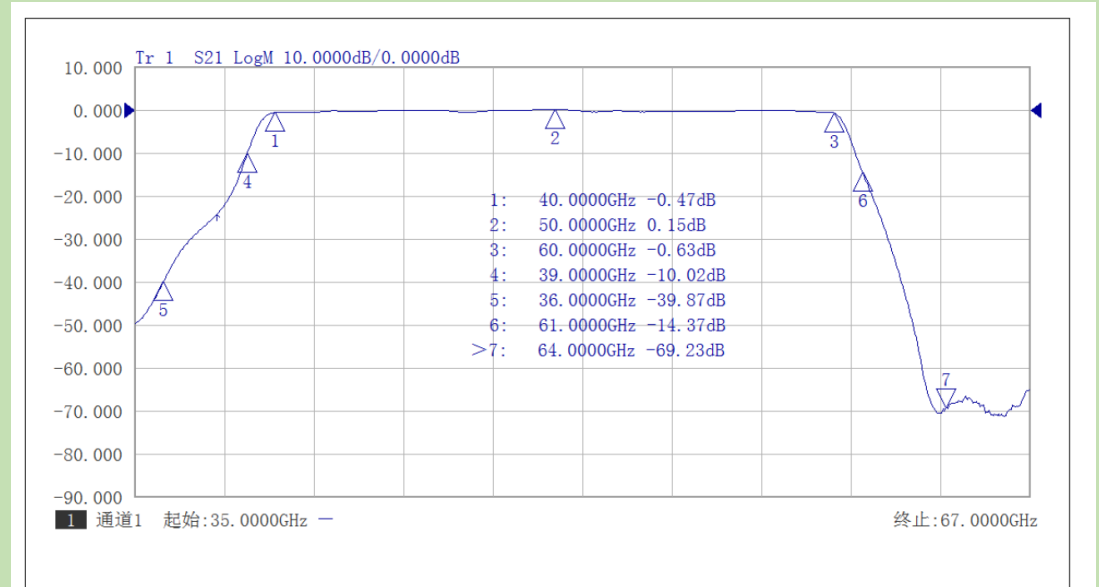
6. Waveguide Filters

Waveguide BPF

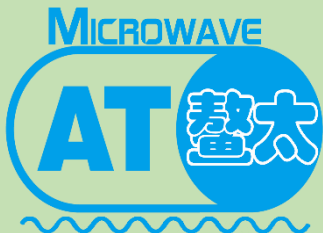
PN	Data Sheet	Type	Lead time	Center Frequency/GHz	Low Freq /GHz	High Freq /GHz	IL /DB	RL/DB	Conector
AT-BPF-3350-22		Q Band	6-8 Weeks	41.5	33	50	-15	10	WR-22
AT-BPF-4060-19		U Band	Stock	50	40	60	-1	10	WR-19
AT-BPF-4254-19		U Band	6-8 Weeks	48	42	54	-1	10	WR-19
AT-BPF-4555-19		U Band	6-8 Weeks	50	45	55	-1	10	WR-19



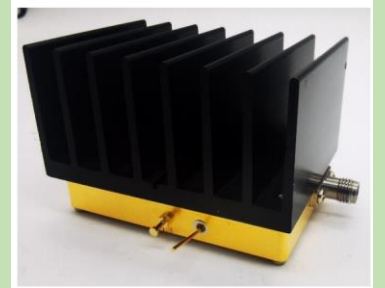
AT-BPF-4060-19



S21 vs Frequency



7. Oscillators



VCO-Coaxial

PN	Type	Data Sheet	Leadtime	Freq Low /GHz	Fre High /GHz	Phase Noise 100kHz	Vtune /V	Pout	Conector
AT-VCO-4070A-18VC	Broadband		6-8 Weeks	40	70	-72	0-12	18	1.8mm
AT-VCO-4060A-18VC	Broadband		Stock	40	60	-72	0-10	18	1.8mm
AT-VCO-3350A-20-24F	Broadband		Stock	33	50	-72	1-13	20	2.4mm
AT-VCO-3350X-22-24F	Broadband		Stock	33	50	-72	1-13	22	2.4mm

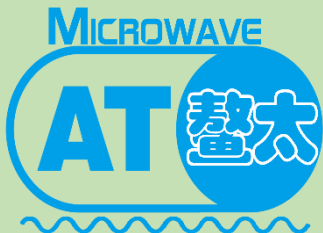
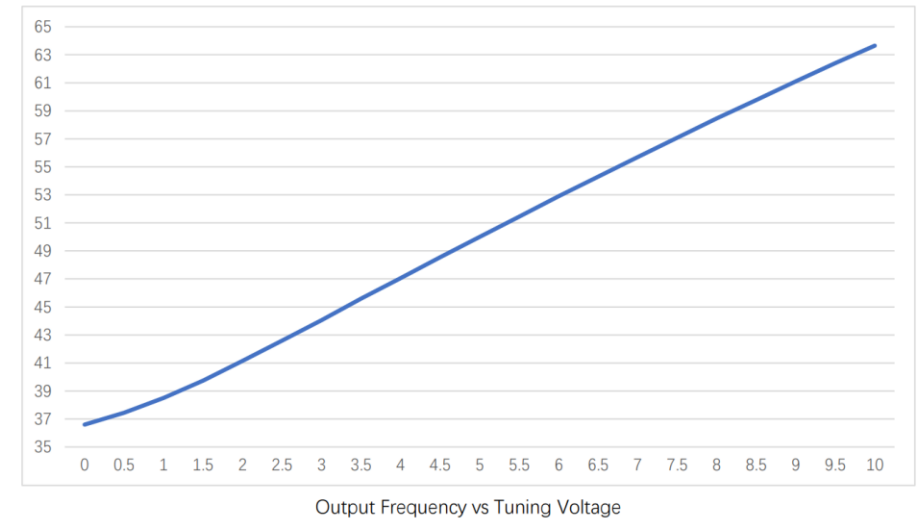
VCO-Waveguide

PN	Type	Data Sheet	Leadtime	Freq Low /GHz	Fre High /GHz	Phase Noise 100kHz	Vtune /V	Pout	Conector
AT-VCO-3350-23D	Q Band		8-10Weeks	33	50	-72	1-13	23	WR-22
AT-VCO-4060-18D	U Band		8-10Weeks	40	60	-72	0-11	18	WR-19
AT-VCO-4060-32D1	High Power		12-14 Weeks	40	60	-72	0-11	32	WR-19
AT-VCO-4060-34D1	High Power		12-14 Weeks	40	60	-72	0-11	34	WR-19
AT-VCO-5075-18D	V Band		8-10Weeks	50	75	-72	4-16	18	WR-15
AT-VCO-5075-32D1	High Power		8-10Weeks	50	75	-72	4-16	32	WR-15



AT-VCO-4060A-18VC 40-60GHz Voltage Control Oscillator

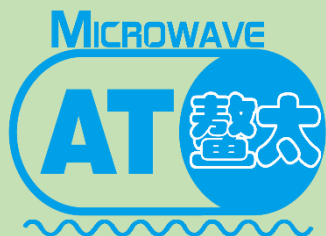
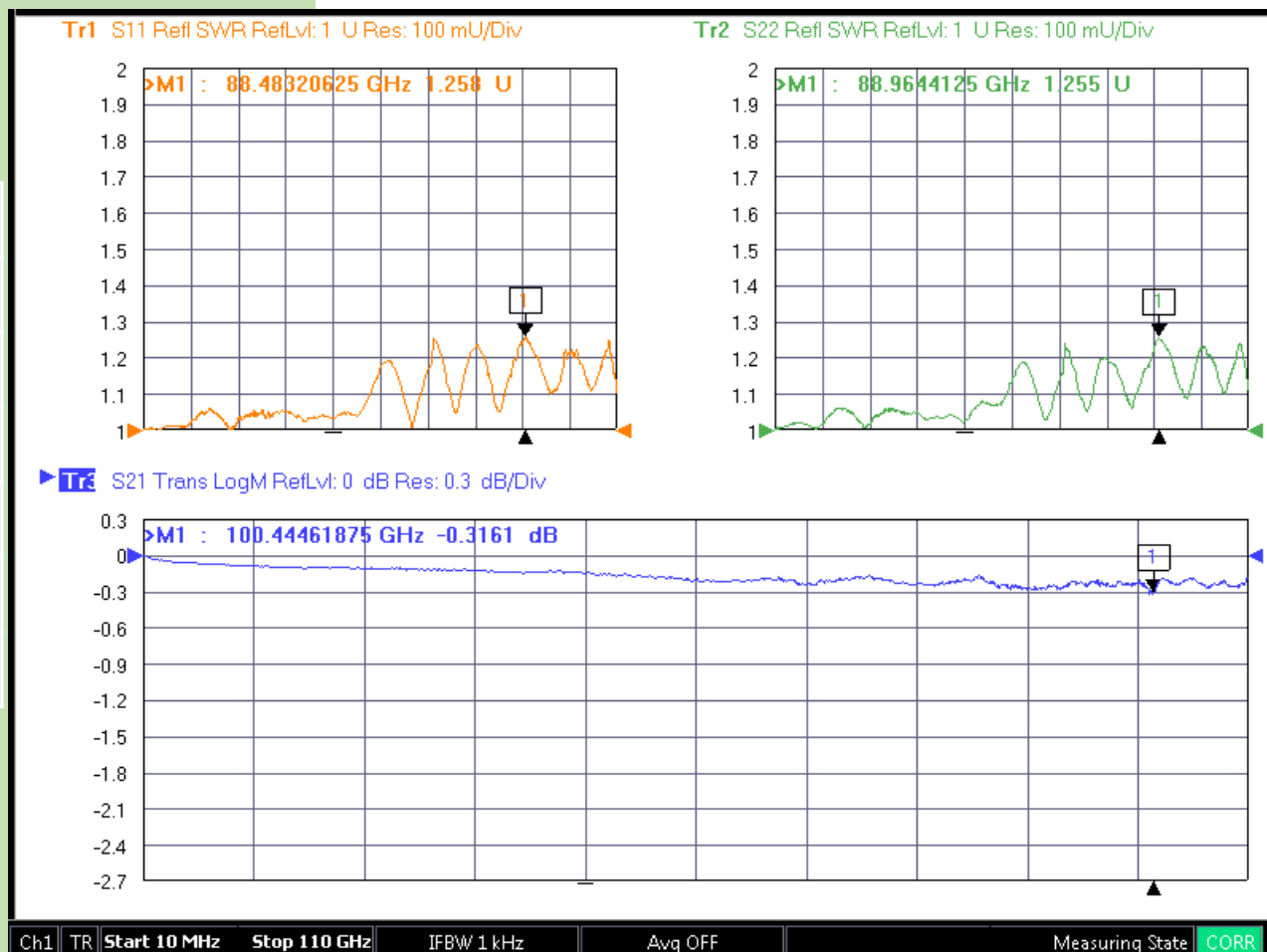
Test Data:



8. Adapter 1.0mm to 1.0mm

PN: AT-AP-10X10X

Parameter	Frequency Range(GHz)	Min	Typ	Max	Unit
Insertion Loss	DC-40GHz		0.3	0.5	dB
	40-67GHz		0.5	0.8	dB
	67-110GHz		0.7	1	dB
VSWR	DC-40GHz		1.2		
	40-67GHz		1.25		
	67-110GHz		1.35		

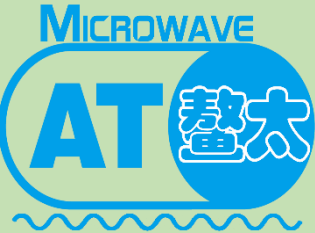
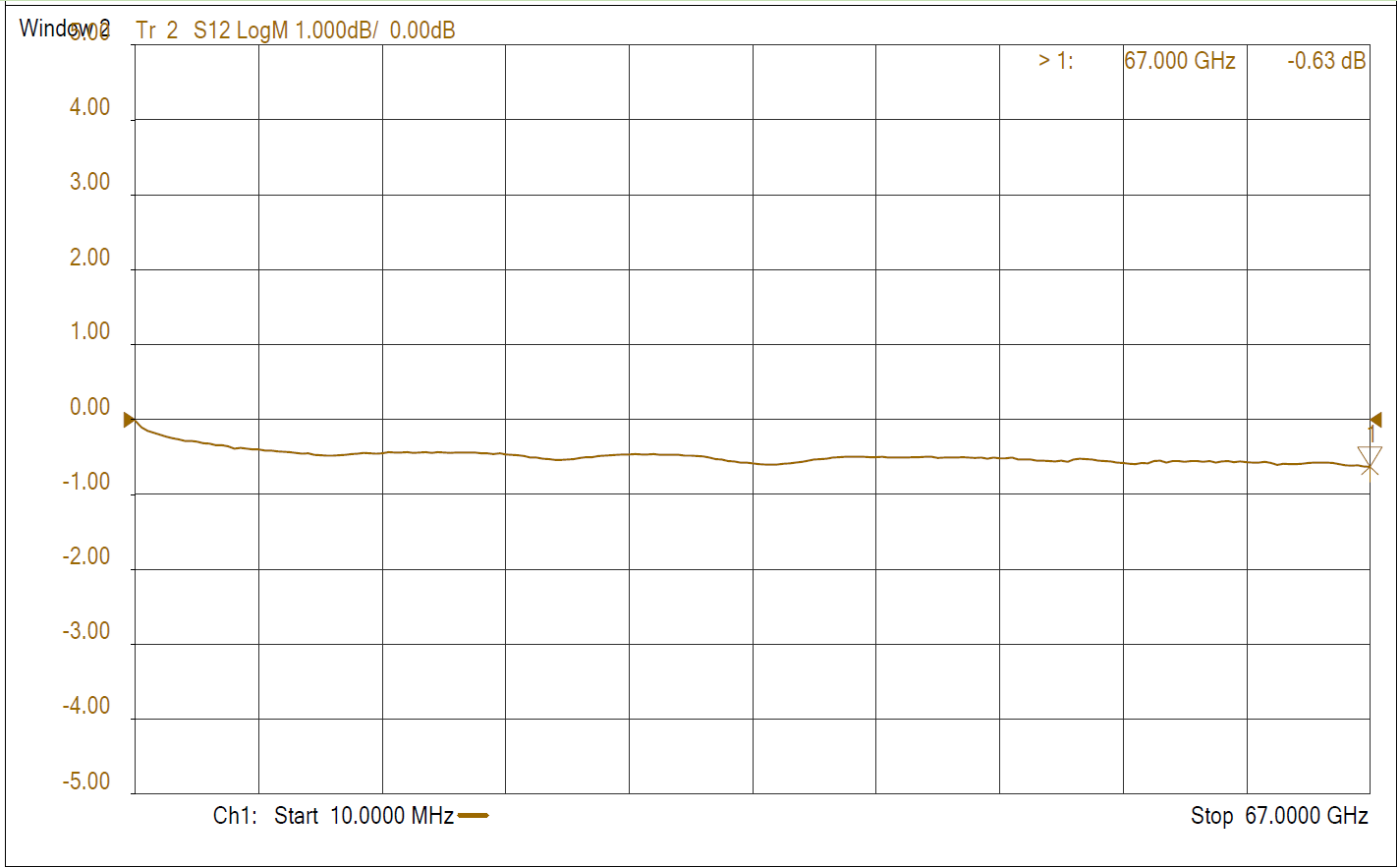


8. Adapter 1.0mm to 1.85mm



PN: AT-AP-10X18X

Parameter	Frequency Range(GHz)	Min	Typ	Max	Unit
Insertion Loss	DC-40GHz		0.3	0.5	dB
	40-50GHz		0.5	0.8	dB
	50-67GHz		0.8	1	dB
VSWR	DC-40GHz		1.2		
	40-50GHz		1.25		
	50-67GHz		1.3		



6. Test Equipment

Signal Frequency Extender

AT-SFX4-19

AT-SFX4-19-HP

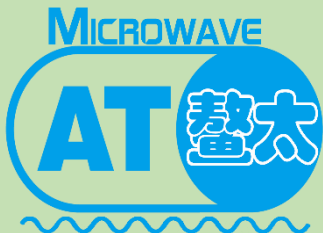
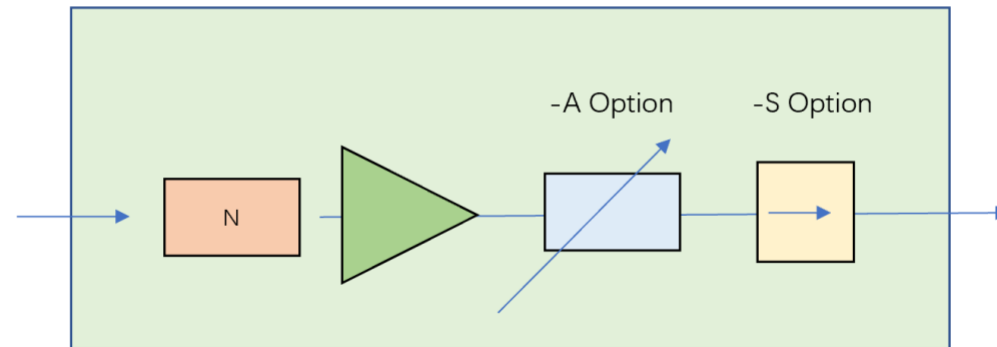
■ Frequency: 40-60GHz

■ Multiplier Time: X4

■ Pout= +18/+25dBm



Block Diagram



6. Test Equipment

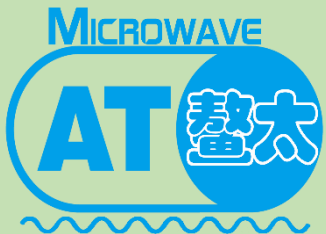
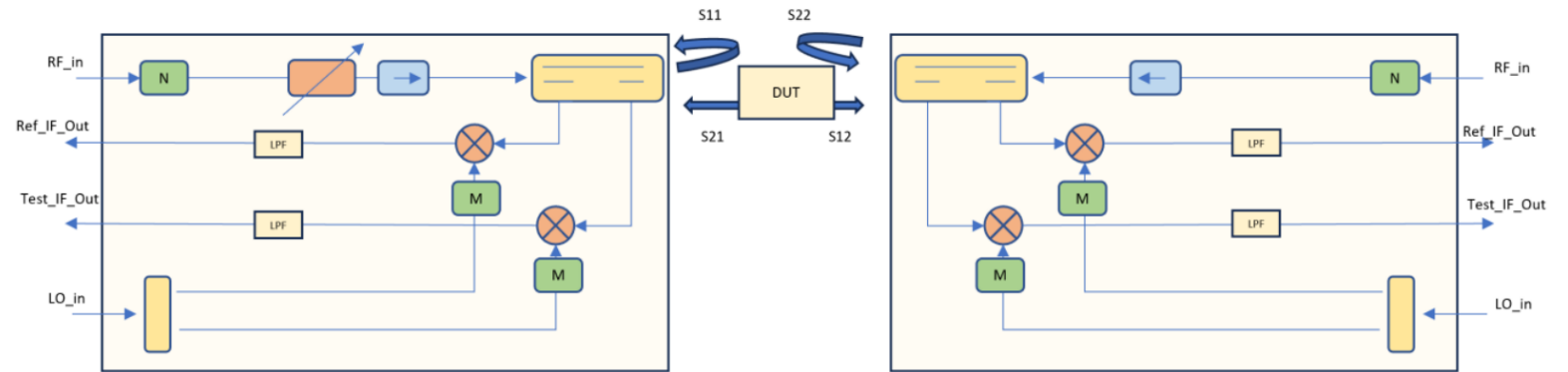
VNA Extender Module

AT-VEX-19



- Frequency: 40-60GHz
- Multiplier Time: X4
- Pout=+13dBm

-FTFR Option Diagram Blcok:

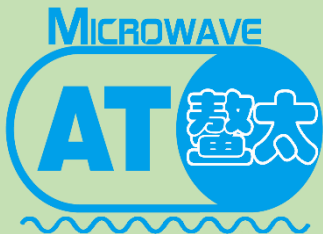
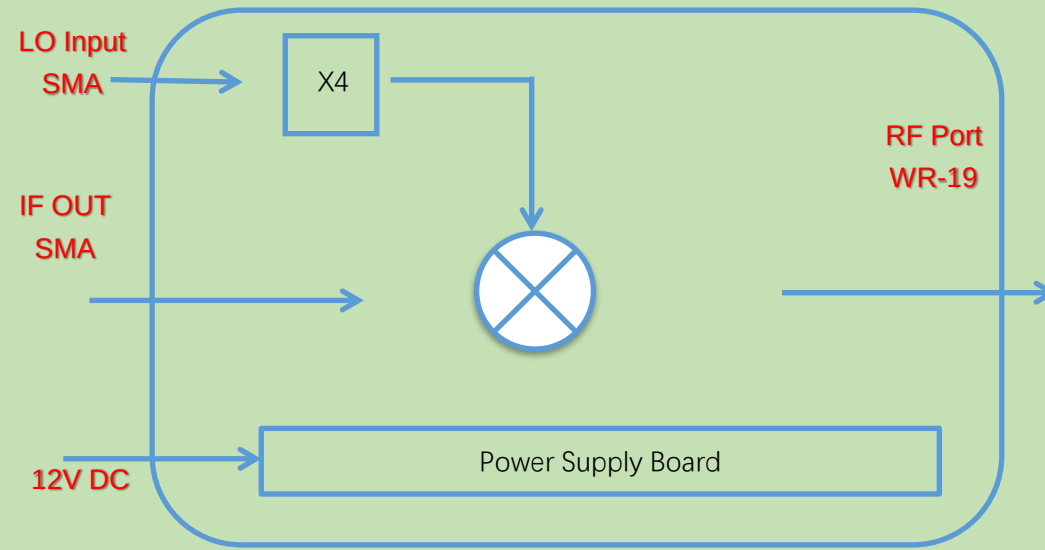


6. Test Equipment

Bench-top Up-Converter

AT-BTUC4-4060

- Frequency: 40-60GHz
- Conversion Loss: -10dB
- Connector: WR-19



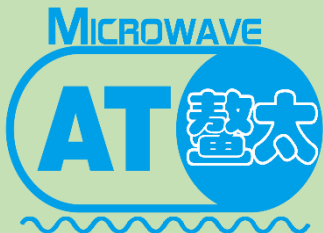
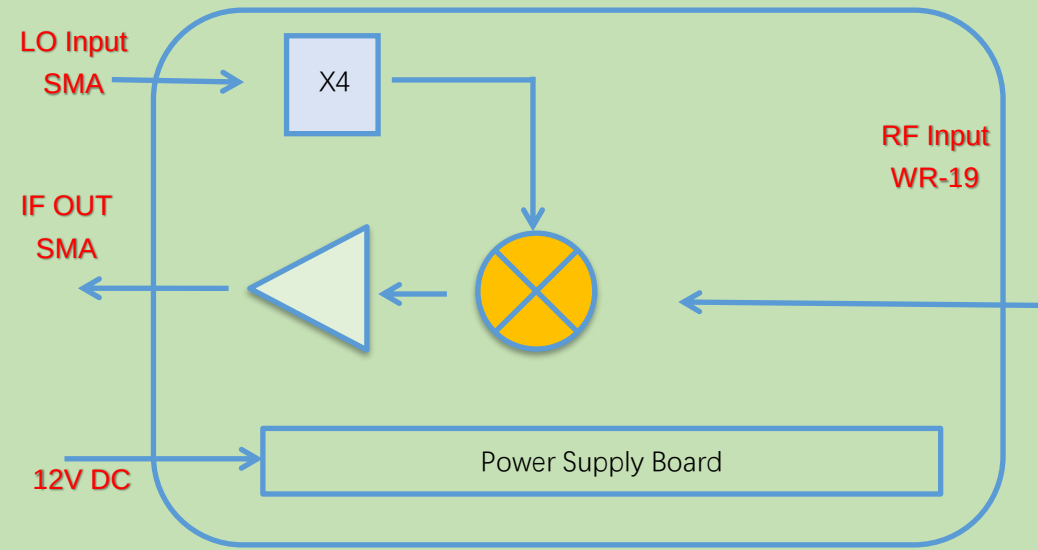
6. Test Equipment

Bench-top **Down-converter**

For NF test and General Receiver

AT-BTDC4-4060

- Frequency: 40-60GHz
- Gain: 20dB
- Connector: WR-19



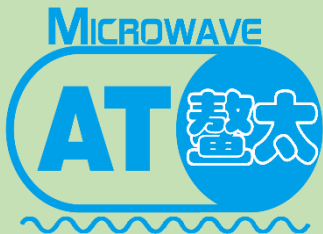
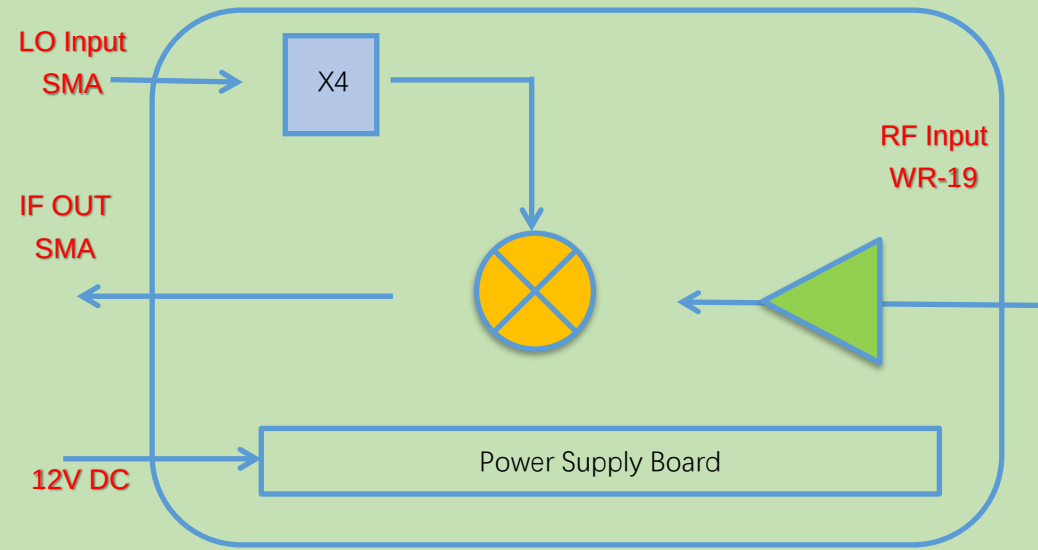
6. Test Equipment

Bench-top Down-converter

Low NF Receiver

AT-BTDC4-4060R

- Frequency: 40-60GHz
- Gain: 20dB
- Connector: WR-19



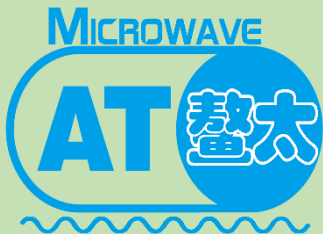
6. Test Equipment

Bench-top Low Noise Amplifier

AT-BTLNA-4060-1805

AT-BTLNA-4060-3305

- Frequency: 40-60GHz
- Gain: 18/33dB
- NF: 5dB
- Connector: WR-19



9. Test Equipment

Bench-top **Power Amplifier**

AT-BTPA-4060-3034

- Frequency: 40-60GHz
- Gain: 30dB
- **Pout: +34dBm**
- Connector: WR-19

