



W Band (75-110GHz) Highlight Products

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Products Lines

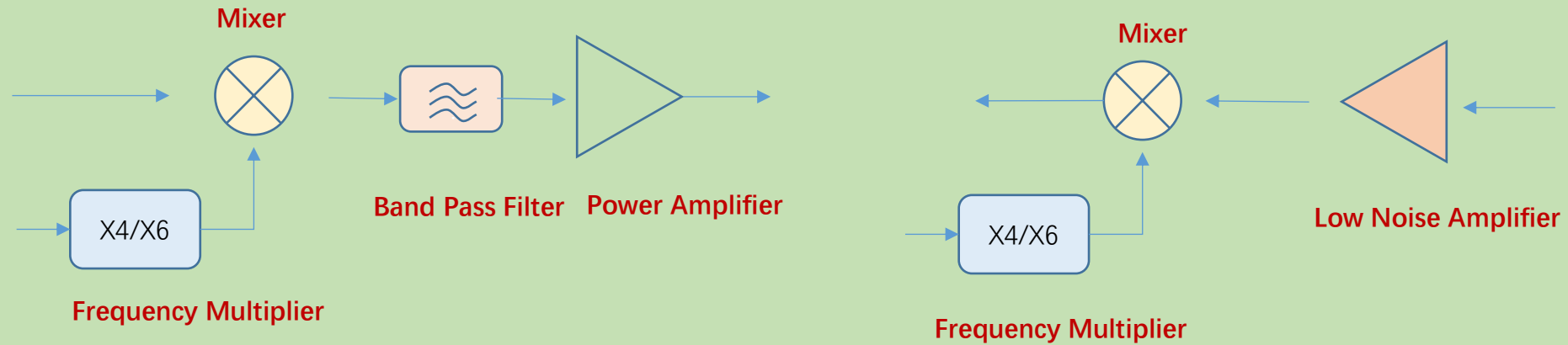
1. Low Noise Amplifier
2. Power Amplifier
3. CPA Series: High Linear PA
4. Frequency Multiplier
5. Mixer/IQ Mixer
6. Tx/Rx Module
7. Filter
8. Attenuator
9. Adapter
10. Waveguide Section
11. Test Equipment

Products Lines

1. Low Noise Amplifier
 2. Power Amplifier
 3. Frequency Multiplier
 4. Tx/Rx Module
 5. Mixer/IQ Mixer
 6. TEST EQUIPMENT
- Adapter
 - Attenuation-Fixed/Variable
 - Antenna
 - Directional Coupler
 - Filter-BPF, HPF, LPF
 - Waveguide Section.



W BAND Solution 75-110GHz



1. Full Band Low Noise Amplifier

PN: AT-LNA-75110-1804
AT-LNA-65115-1804



Advantages

- Frequency: 75-110GHz
- Extended test 65-115GHz
- High Gain: 18dB
- NF: 4dB
- Single Supply



1. Full Band High Gain LNA



PN: AT-LNA-75110-4204

AT-LNA-75110-3504HP

Advantages

- Frequency: 75-110GHz
- High Gain: 42/35dB
- NF: 4dB
- Single Supply



2. Full Band Power Amplifier

PN	Data Sheet	Type	Leadtime	Low Fre /GHz	High Fre /GHz	Gain /dB	P1 /dBm	Psat /dBm	Connector
AT-PA-75110-1513T		W Band	Stock	75	110	15	10	13	WR-10
AT-LNA-75110-3504HP		W Band	Stock	75	110	35	10	13	WR-10
AT-PA-75110-1620GN		W Band	Stock	75	110	16	16	20	WR-10
AT-PA-75110-1822GN		W Band	Soon	75	110	18	-	22	WR-10
AT-PA-75110-3322GN		W Band	10 Weeks	75	110	33	-	22	WR-10
AT-PA-75110-1026GN		W Band	Stock	75	110	10	-	26	WR-10
AT-PA-75110-2526GND		High Power	Stock	75	110	25	22	26	WR-10
AT-PA-75110-2729GN		High Power	Stock	75	110	27	-	29	WR-10

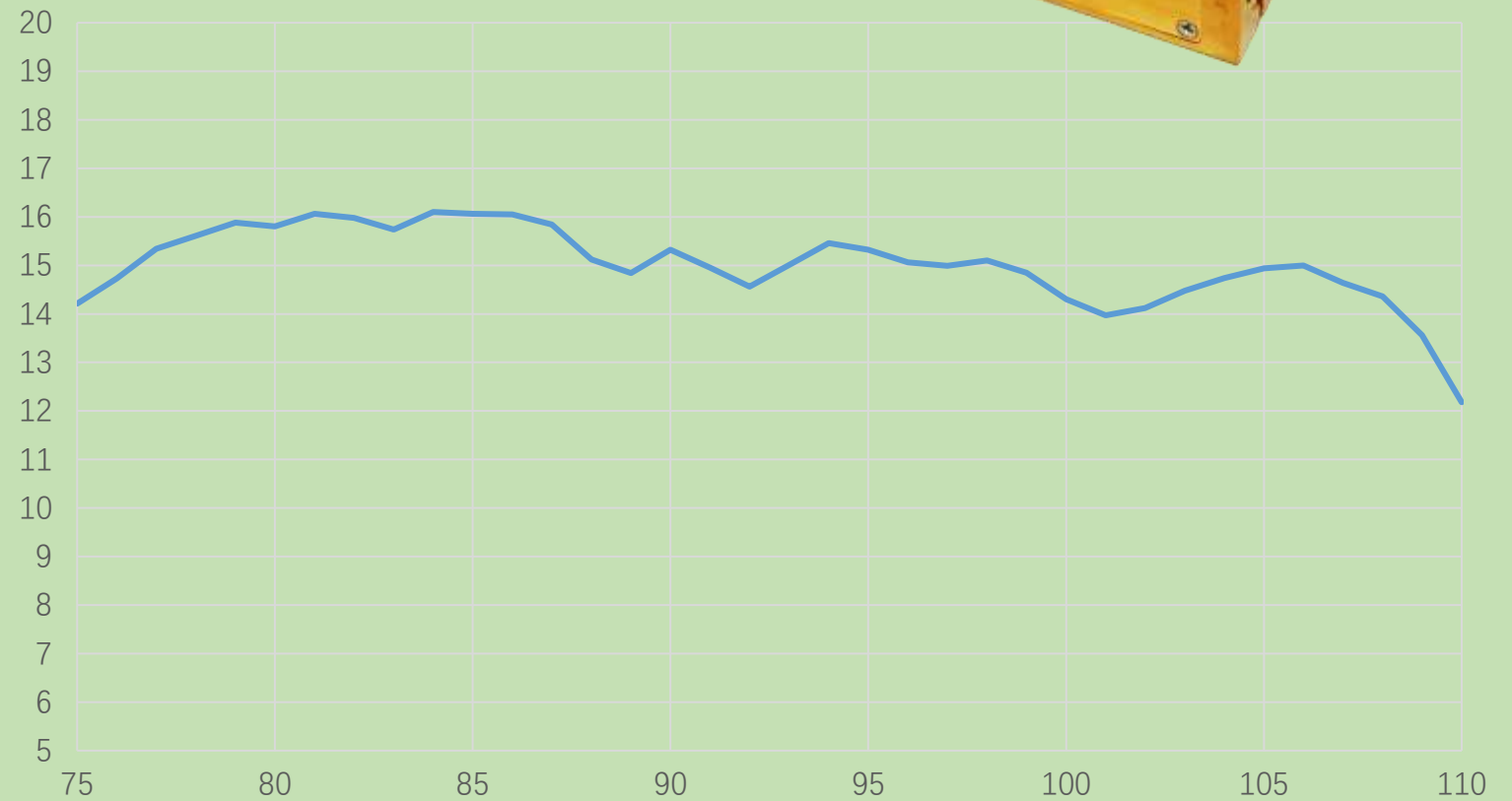


2. Full Band Power Amplifier

PN: AT-PA-75110-1513

Advantages

- Frequency: 75-110GHz
- Psat: +13dBm
- Small signal gain: 15dB
- Single Power Supply



2. GaN Based High Power PA

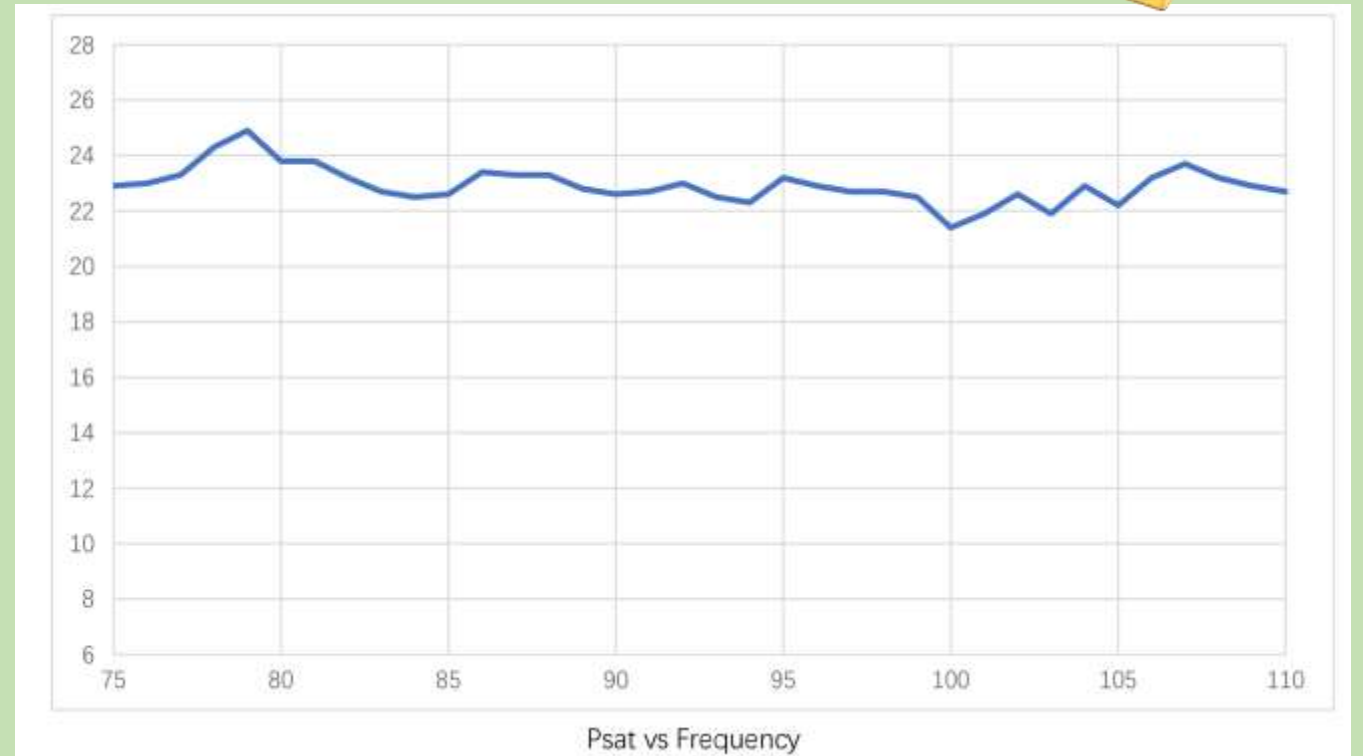
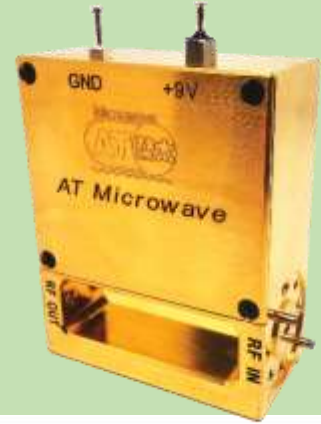
PN: AT-PA-75110-1823

AT-PA-75110-3322

AT-PA-70110-1823

Advantages

- Frequency: 75-110GHz
- **Psat: +22dBm**
- High Gain: 18/33dB
- Single Power Supply

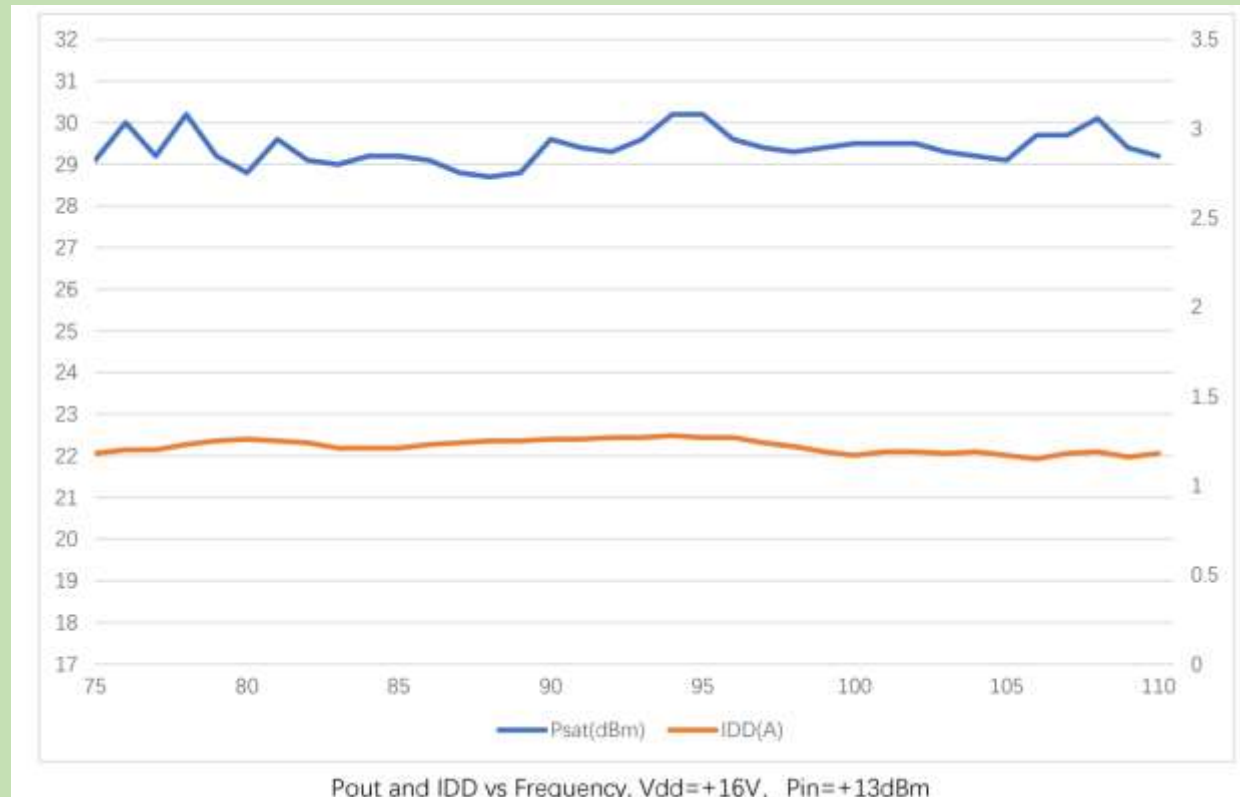


2. GaN Based High Power PA

PN: AT-PA-75110-2729

Advantages

- Frequency: 75-110GHz
- Psat: +29dBm
- High Gain: 27dB
- Single Power Supply

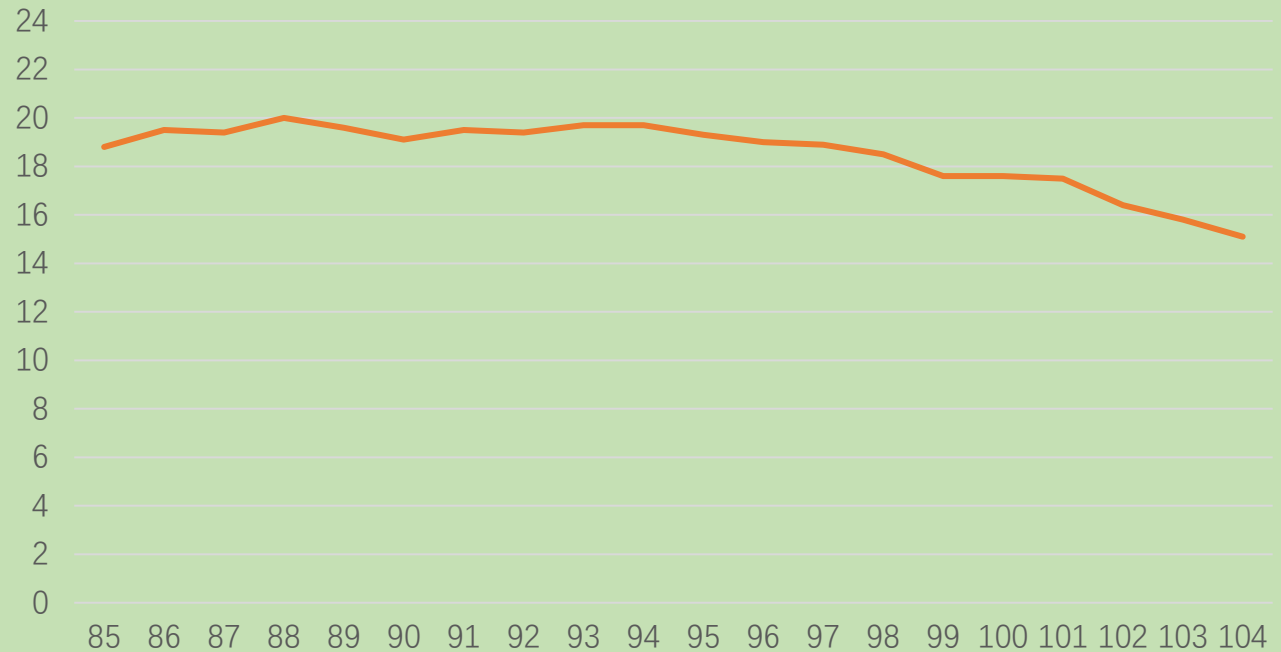


2. High Gain Power Amplifier

PN: AT-PA-88104-2818
AT-PA-88104-1220

Advantages

- Frequency: 88-104GHz
- Psat: +18dBm
- Small signal gain: 12/28dB
- Single Power Supply

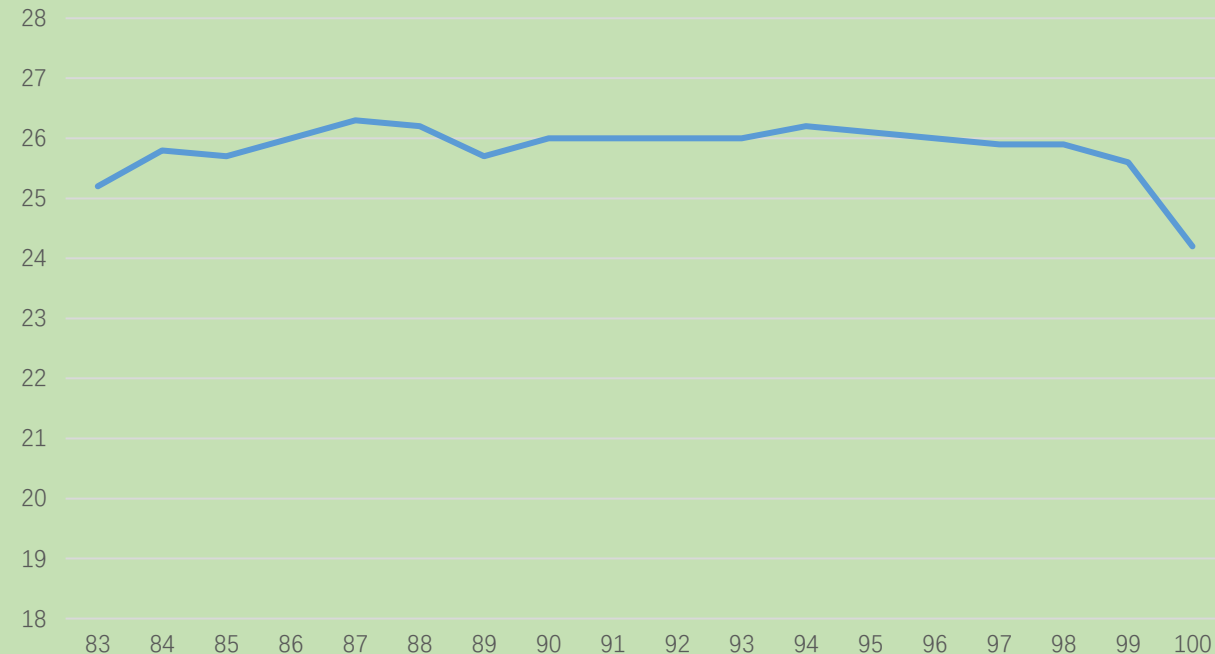
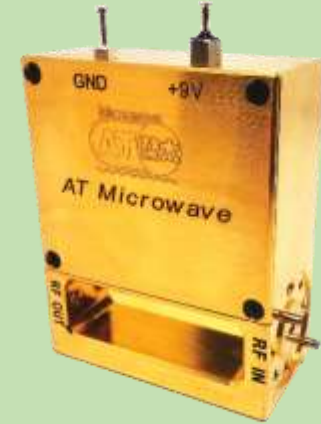


2. High Power Power Amplifier

PN: AT-PA-85100-1226

Advantages

- Frequency: 85-100GHz
- **P_{sat}: +26dBm**
- Small signal gain: 12dB
- Single Power Supply

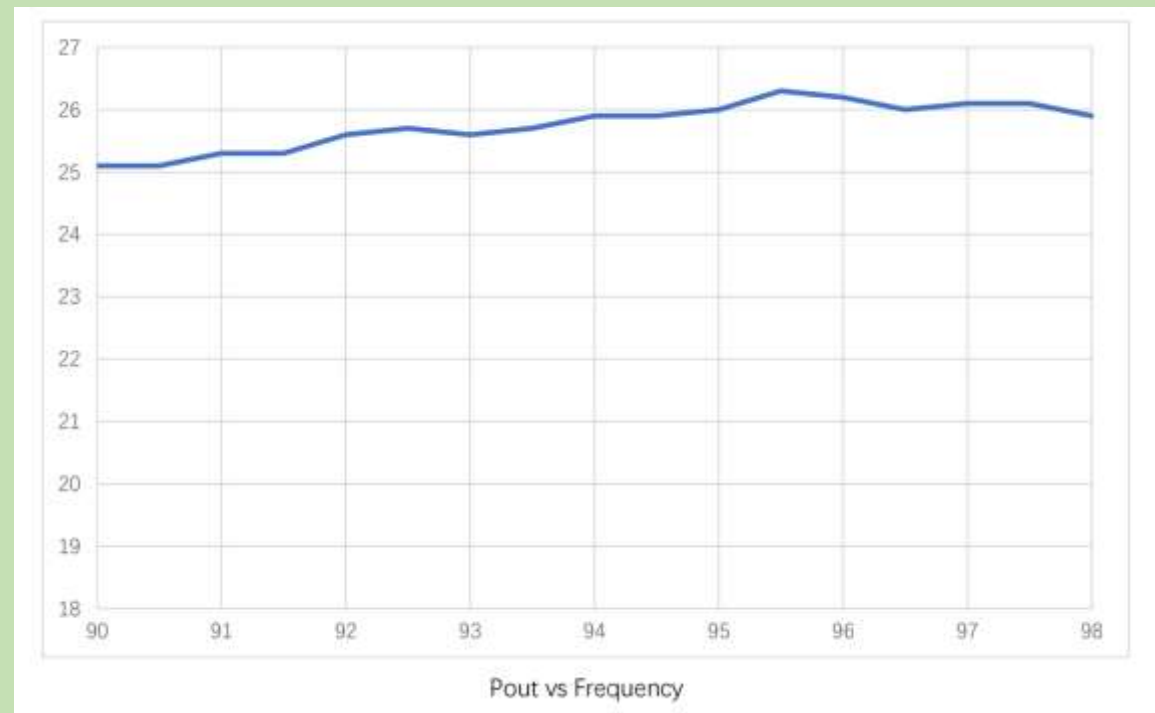


2. High Power Power Amplifier

PN: AT-PA-9098-2526E

Advantages

- Frequency: 90-98GHz
- Psat: +26dBm
- High Gain: 25dB
- Single Power Supply

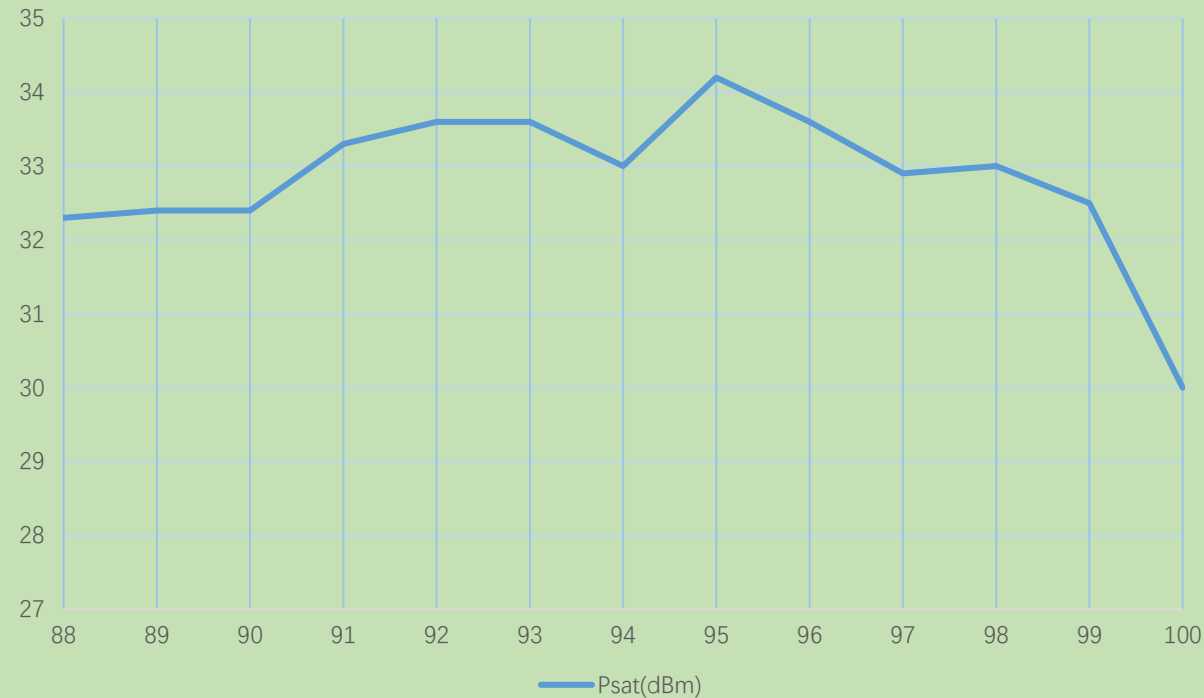


2. GaN Based High Power PA

PN: AT-PA-8898-3533

Advantages

- Frequency: 88-98GHz
- Psat: +33dBm
- High Gain: 35dB
- Single Power Supply

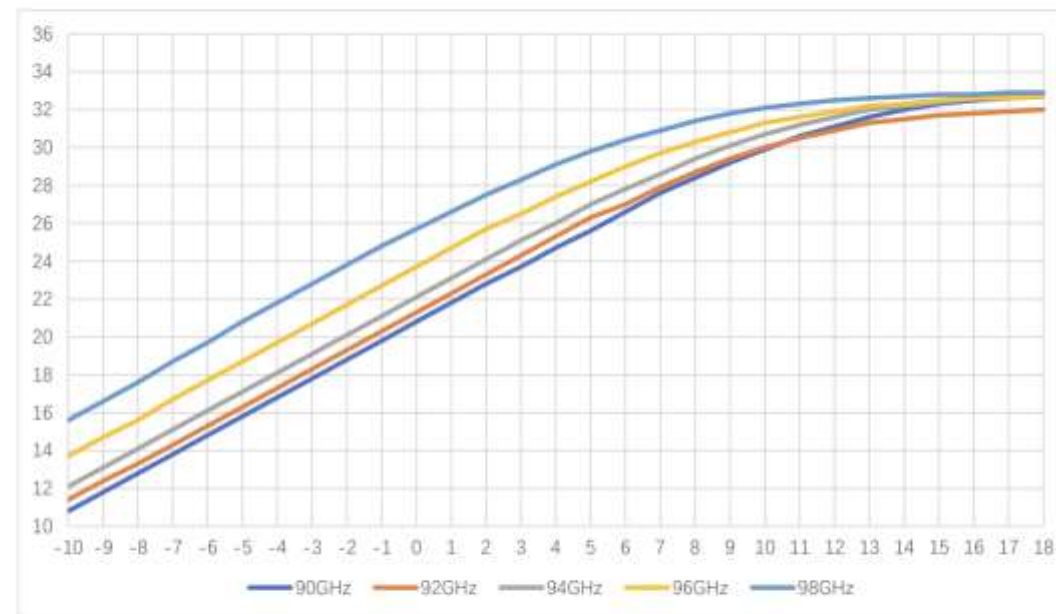


2. CPA Series: High Linear PA

☐	PN	Data Sheet	Leadtime	Band	Low Fre /GHz	High Fre /GHz	Gain /dB	P1 /dBm	Psat /dBm
☐	AT-CPA-9098-1028G1		Stock	W	90	98	10	+26	+28
☐	AT-CPA-9098-1030G2		Stock	W	90	98	10	+28	+30
☐	AT-CPA-9098-3530G2		Contact us	W	90	98	35	+28	+30
☐	AT-CPA-9098-2032G3-NHF		Contact us	W	90	98	20	+30	+32
☒	AT-CPA-9098-2032G3-LCBT		Contact us	W	90	98	20	+30	+32



AT-CPA-9098-2332G3 90-98GHz Power Amplifier, Psat=+32dBm



Pout vs Pin

Frequency/GHz	P1dB/dBm	Psat/dBm
90	29.9	32.7
92	29.4	32
94	30.1	32.7
96	29.7	32.7
98	29.8	32.9

3. Full band Active Frequency Multiplier



☐	PN	Data Sheet	Lead time	Band	Multiplier Factor	Input Pin /dBm	Output Low /GHz	Output High /GHz	Pout /dBm	Wave guide
☐	AT-AM4-75110-13		Stock	W	X4	+10	75	110	+13	WR-10
☐	AT-AM6-75110-10		Stock	W	X6	+10	75	110	+10	WR-10
☐	AT-AM6-67110E-10L		Stock	W	X6	+3	67	110	+10	WR-10
☐	AT-AM6-75110-13L		Stock	W	12.5	18.33	75	110	+13	WR-10
☐	AT-AM6-75110E-13L		Stock	W	12.5	18.33	75	110	+13	WR-10
☐	AT-AM6-75110-20L		Stock	W	12.5	18.33	75	110	+20	WR-10
☐	AT-AM6-75110-23L		Stock	W	12.5	18.33	75	110	+23	WR-10
☐	AT-AM6-75110E-23L		Stock	W	12.5	18.33	75	110	+23	WR-10
☐	AT-AM8-75110E-13L2		Soon	W	9.375	13.75	75	110	+13	WR-10
☐	AT-AM8-75110-20L		10-12Weeks	W	9.375	12.5	75	110	+20	WR-10
☐	AT-AM8-75110-23L		10-12Weeks	W	9.375	12.5	75	110	+23	WR-10



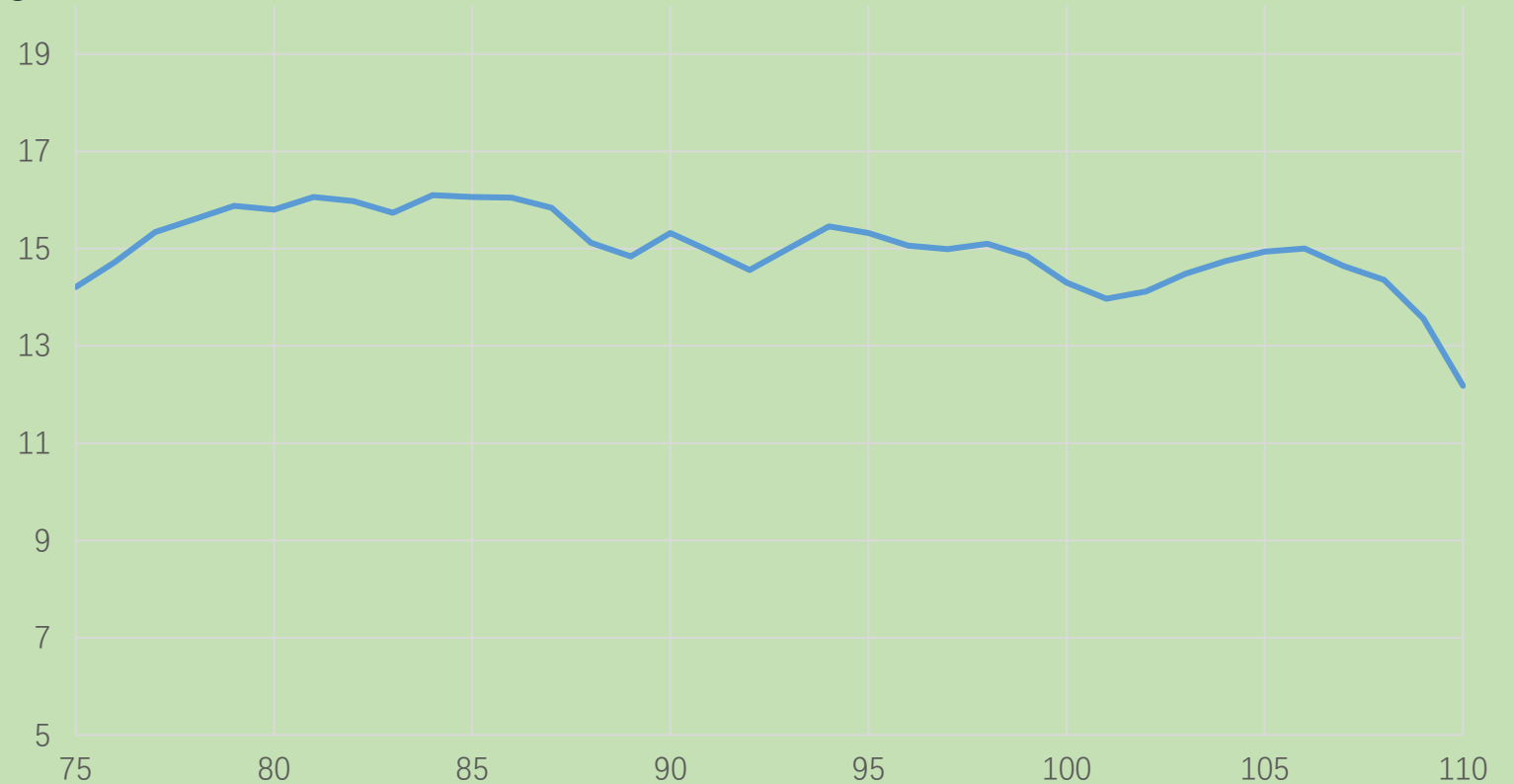
3. Full band Active Frequency Multiplier

AT-AM6-75110-13L

AT-AM6-67110E-10L

Feature

- Frequency: 75-110GHz
- Pout: +13dBm typical
- Input: 12.5-18.33GHz
- Low Harmonics

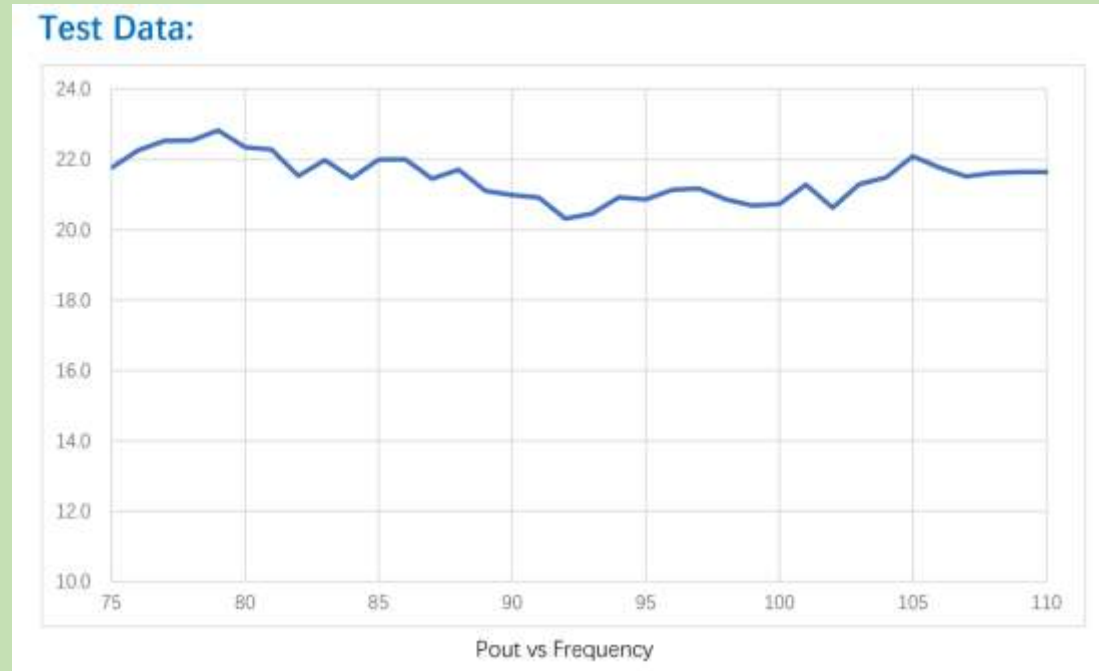


3. Full band Active Frequency Multiplier

PN: AT-AM6-75110-20L
AT-AM6-75110-23L

Feature

- Frequency: 75-110GHz
- Pout: +20/+23dBm typical
- Input: 12.5-18.33GHz, +3dBm
- Low Harmonics



4. Tx/Rx modules

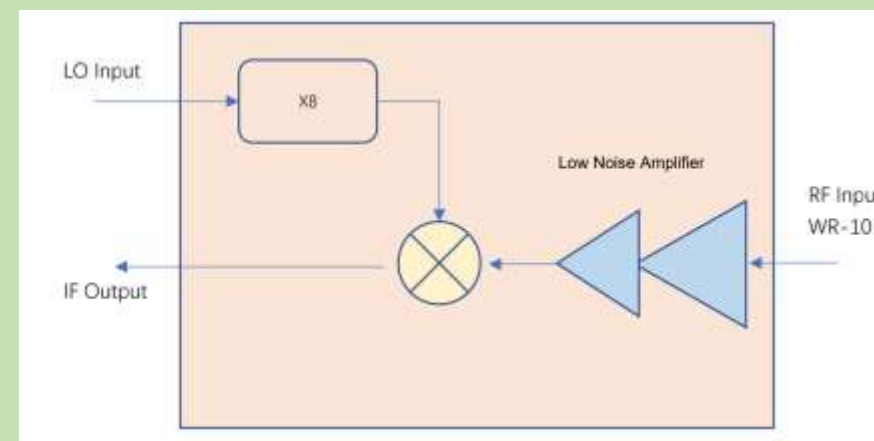
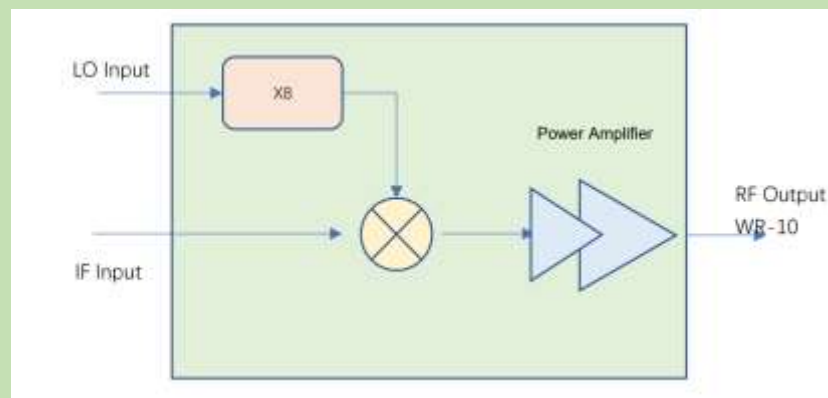
AT-WTX-88104SIF

AT-WRX-86106SIF

Single IF Port input and output

Feature

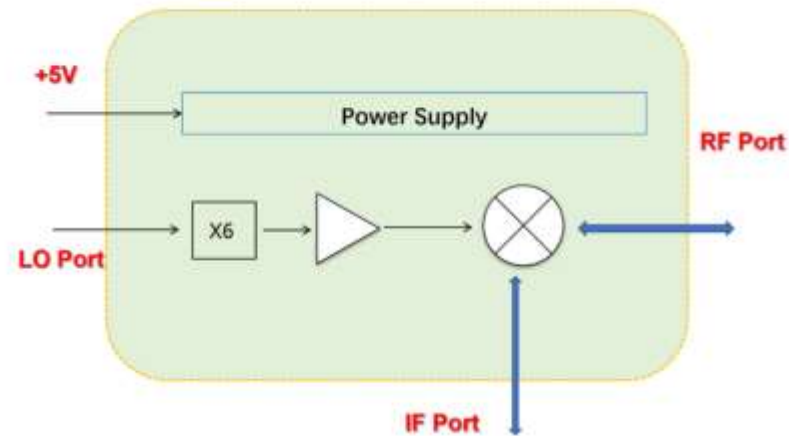
- Frequency: 88-104GHz
- Gain: +13dB typical
- IF Range: DC-10GHz
- Single Power Supply



4. Full band Balance Mixer Integrated with LO Chain

☐	PN	Data Sheet	Type	Lead time	RF Low(GHz)	RF High (GHz)	Gain	Connector
☐	AT-6MIX-75110TL		W LO X6	Stock	75	110	-12	WR-10
☐	AT-8MIX-75110L-C1		W LO X8	8-10 Weeks	75	110	-12	WR-10
☐	AT-8MIX-86100SIF		W LO X8	10-12 Weeks	86	100	-12	WR-10

Diagram Block



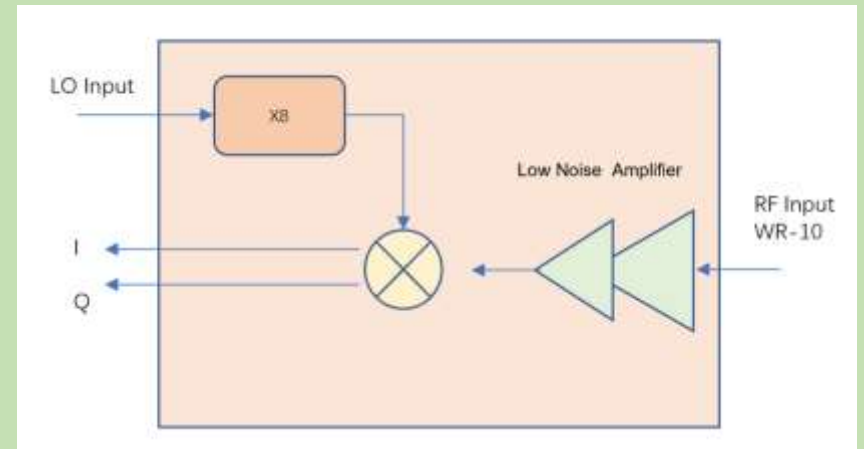
r. W Band Rx modules

AT-WRX-9098IQ

IF Port: I and Q

Feature

- Frequency: 90-98GHz
- Gain: +13dB typical
- IF Range: DC-10GHz
- Single Power Supply



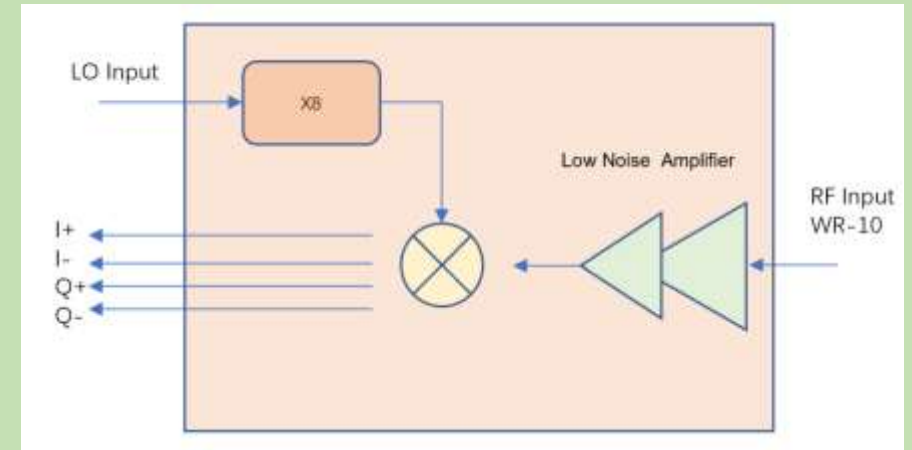
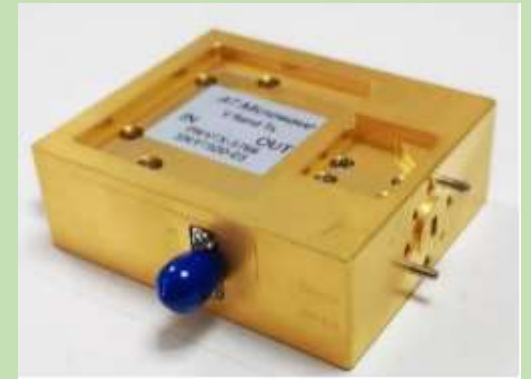
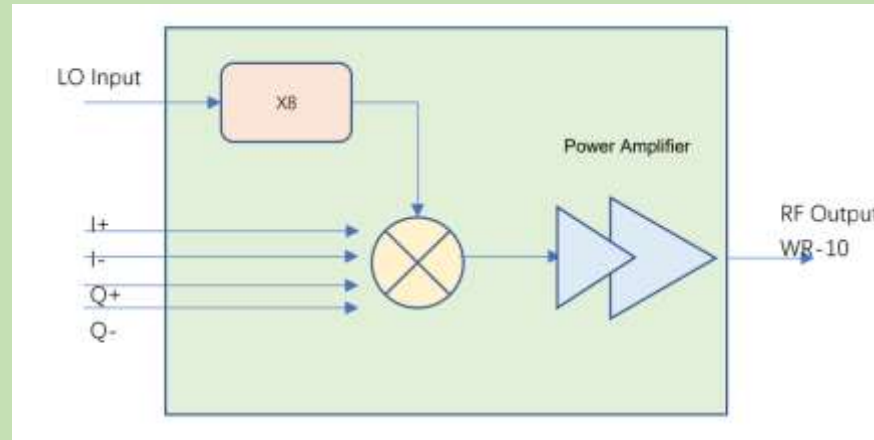
4. W Band Tx/Rx modules

AT-WTX-92100IQD
AT-WRX-92100IQD

IF Port: Differential I and Q

Feature

- Frequency: 92-100GHz
- Gain: +13dB typical
- IF Range: DC-10GHz
- Single Power Supply



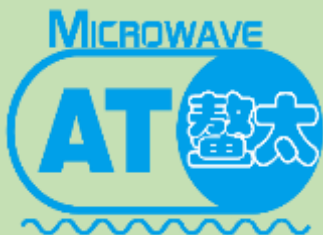
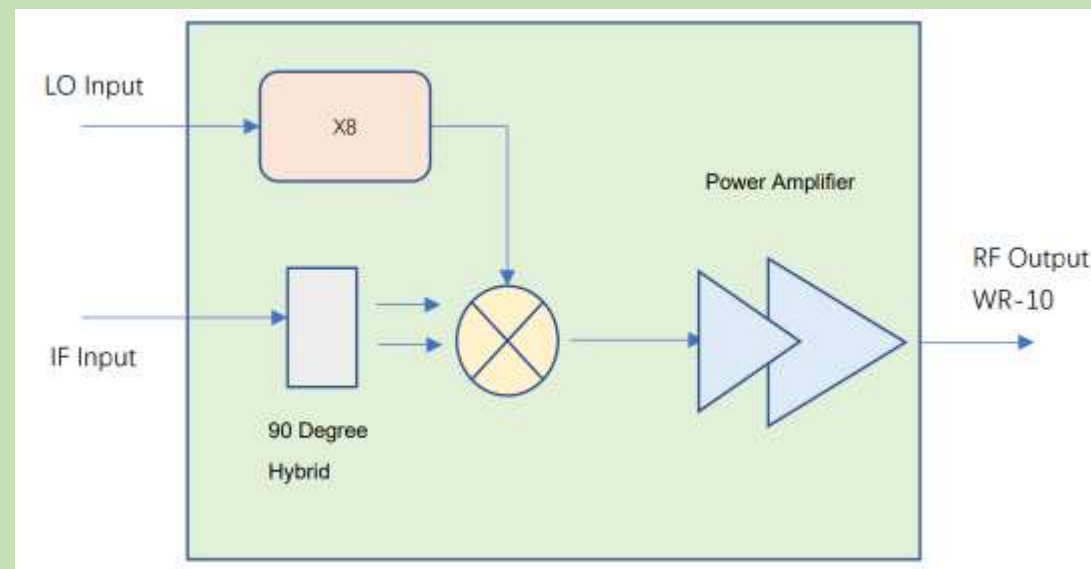
4. W Band Single-side Tx modules

AT-WTX-88100SIR

Hybrid with IF Port, Single-side Tx module

Feature

- Frequency: 88-100GHz
- Gain: +13dB typical
- IF Range: 2-8GHz
- Single Power Supply



4. W Band Imaging Rejection Rx modules

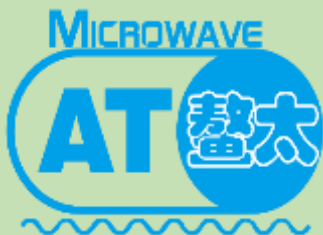
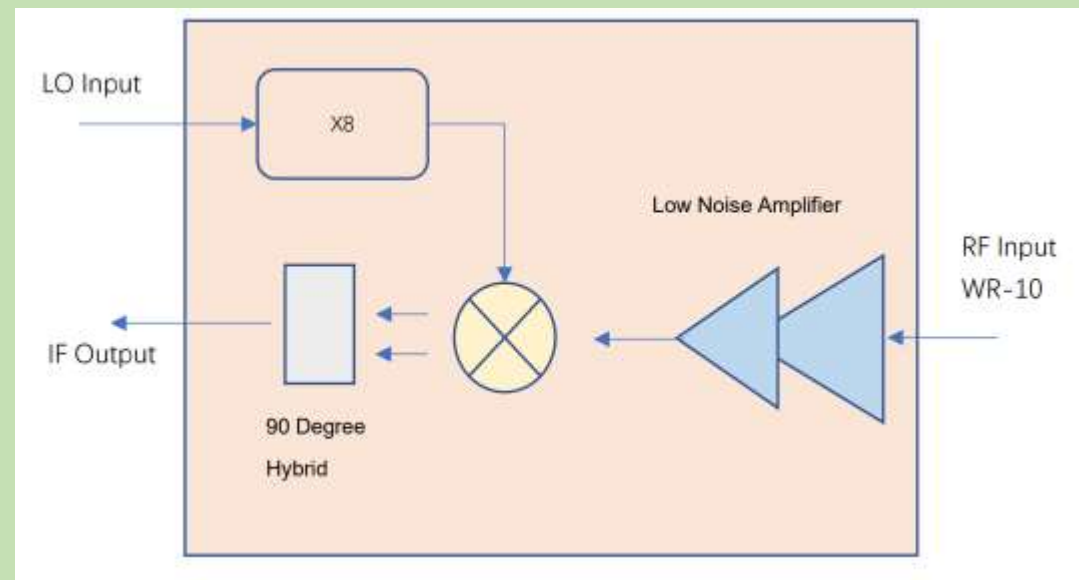
AT-WRX-88100SIR

Hybrid with IF Port, Imaging Rejection Rx module



Feature

- Frequency: 88-100GHz
- Gain: +13dB typical
- IF Range: 2-8GHz
- Single Power Supply

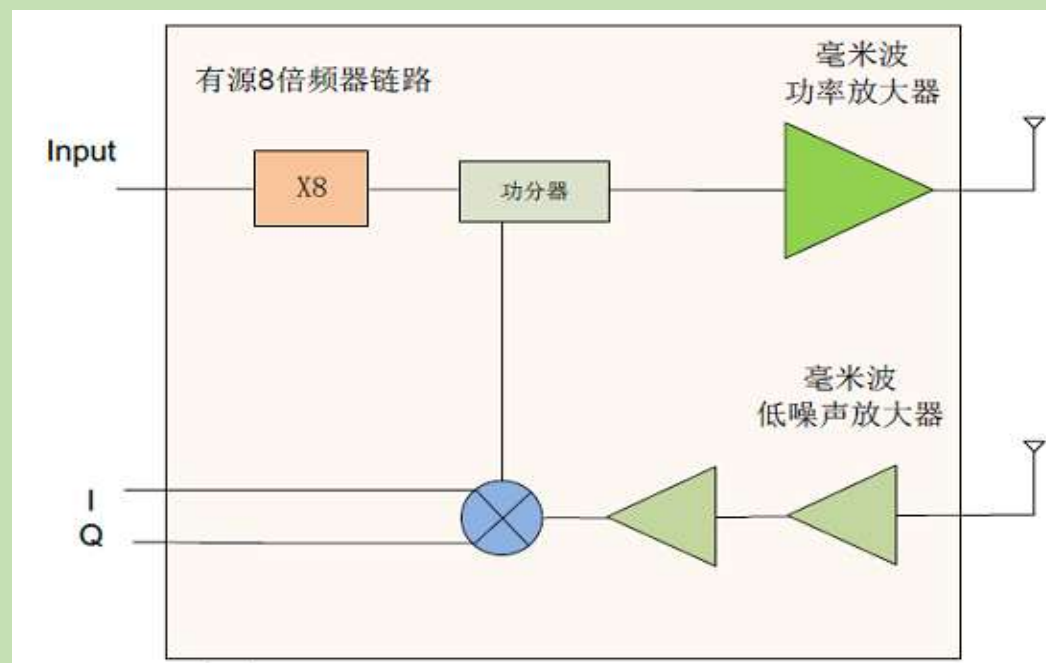


4. FMCW Tx and Rx modules

PN: AT-FMCW-9098TR

Feature

- Tx 90-98GHz
- Tx Pout: +20dBm
- Rx Gain 20dB
- Rx NF: 4dB

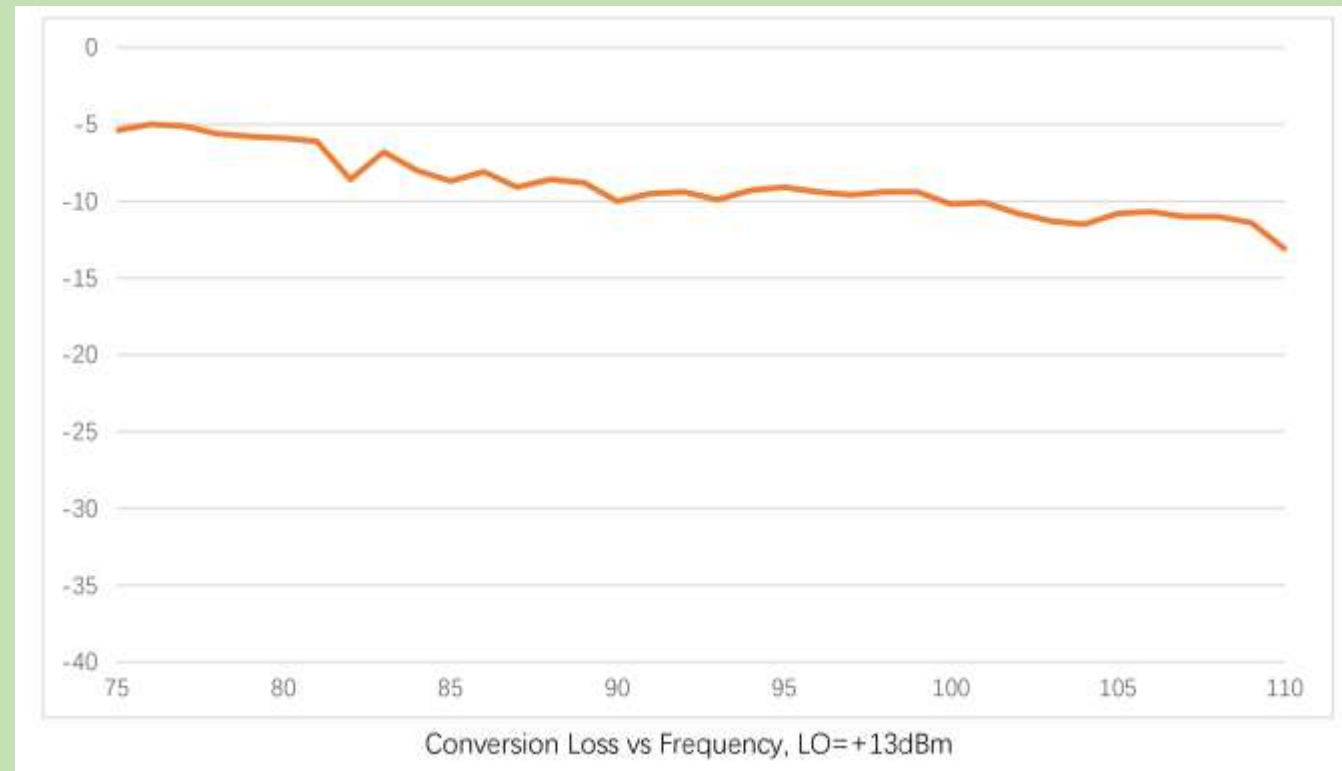


5. Full band Balance Mixer

PN: AT-MIX-75110

Feature

- RF/LO: 75-110GHz
- IF: DC-35GHz
- Low Conversion Loss
- Low LO power requirement
- High RF/LO Isolation

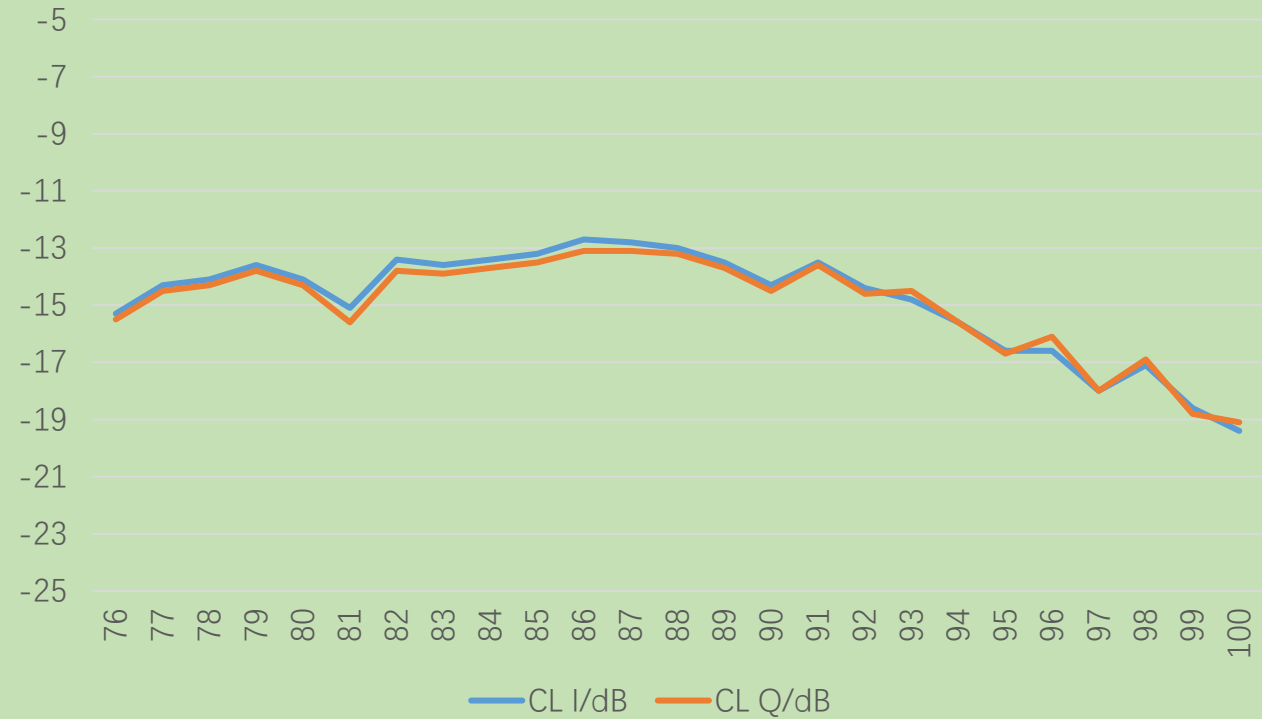


5. Low LO driver IQ Mixer

PN: AT-IQM-75100G

Feature

- RF/LO: 75-100GHz
- IF: DC-12GHz
- Low Conversion Loss
- Low LO power requirement
- High RF/LO Isolation



6. Test Equipment

Signal Frequency Extender

AT-SFX6-10

AT-SFX6-10-HP

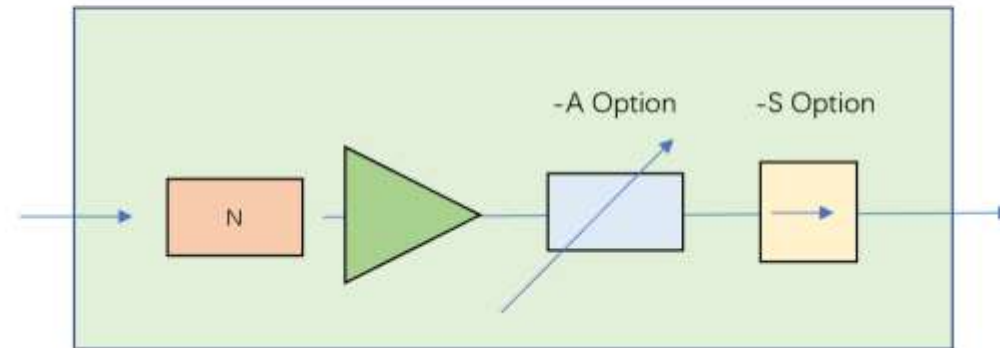
■ Frequency: 75-110GHz

■ Multiplier Time: X6

■ Pout=+13 to +30dBm



Block Diagram



6. Test Equipment

VNA Extender Module

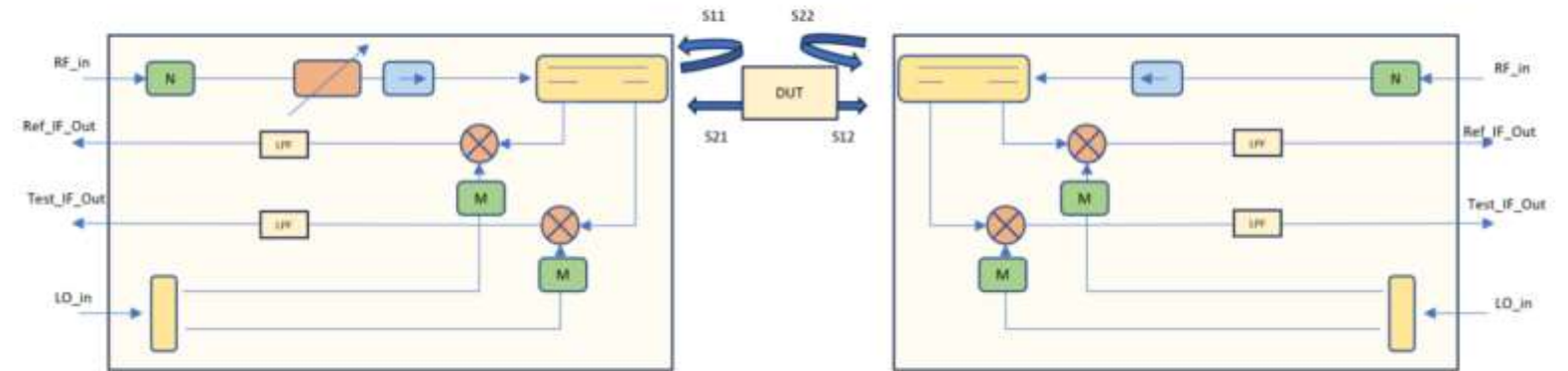
AT-VEX-10

AT-VEX-10HP

- Frequency: 75-110GHz
- Multiplier Time: X6
- Pout= +8/+18dBm



-FTFR Option Diagram Blcok:



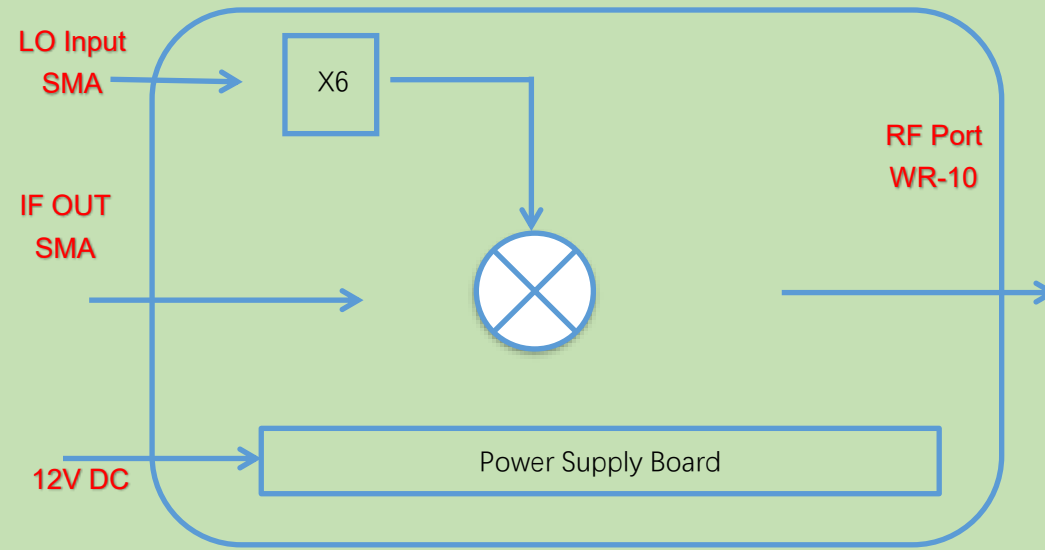
6. Test Equipment

Bench-top Up-Converter

AT-BTUC4-75110

AT-BTUC6-75110

- Frequency: 75-110GHz
- Conversion Loss: -10dB
- Connector: WR-10



6. Test Equipment

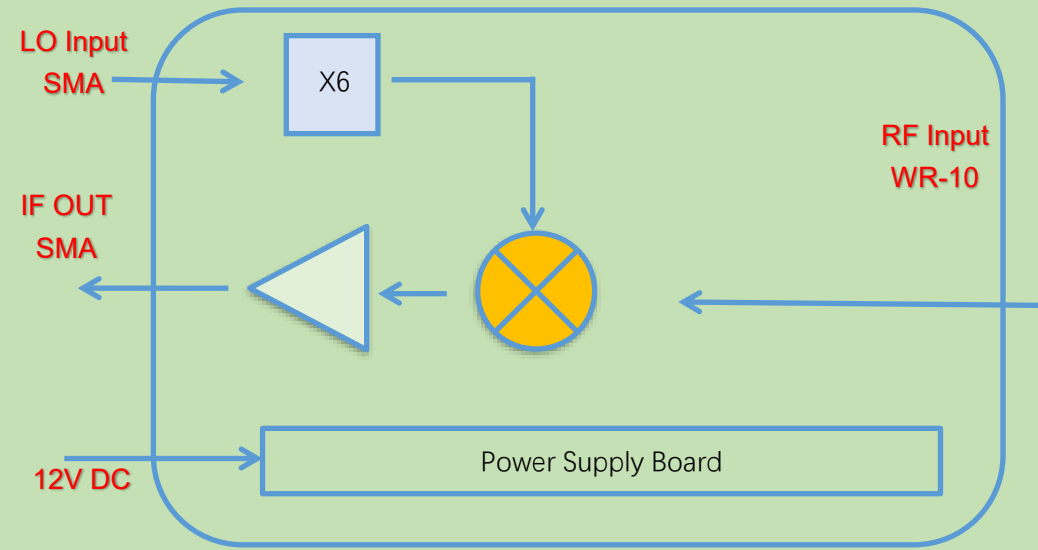
Bench-top Down-converter

For NF test and General Receiver

AT-BTDC6-75110

AT-BTDC6-75110R

- Frequency: 75-110GHz
- Gain: 20dB
- Connector: WR-10



6. Test Equipment

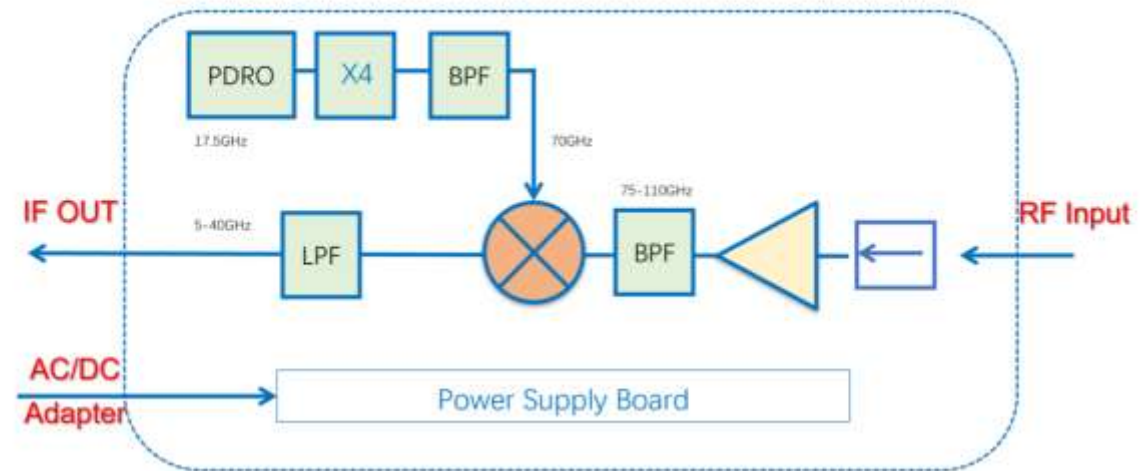
Bench-top **Down-converter** For NF TEST

AT-BTWDC-75110R1

- Frequency: 75110GHz
- Gain: 5dB
- Connector: WR-10



Diagram Block:

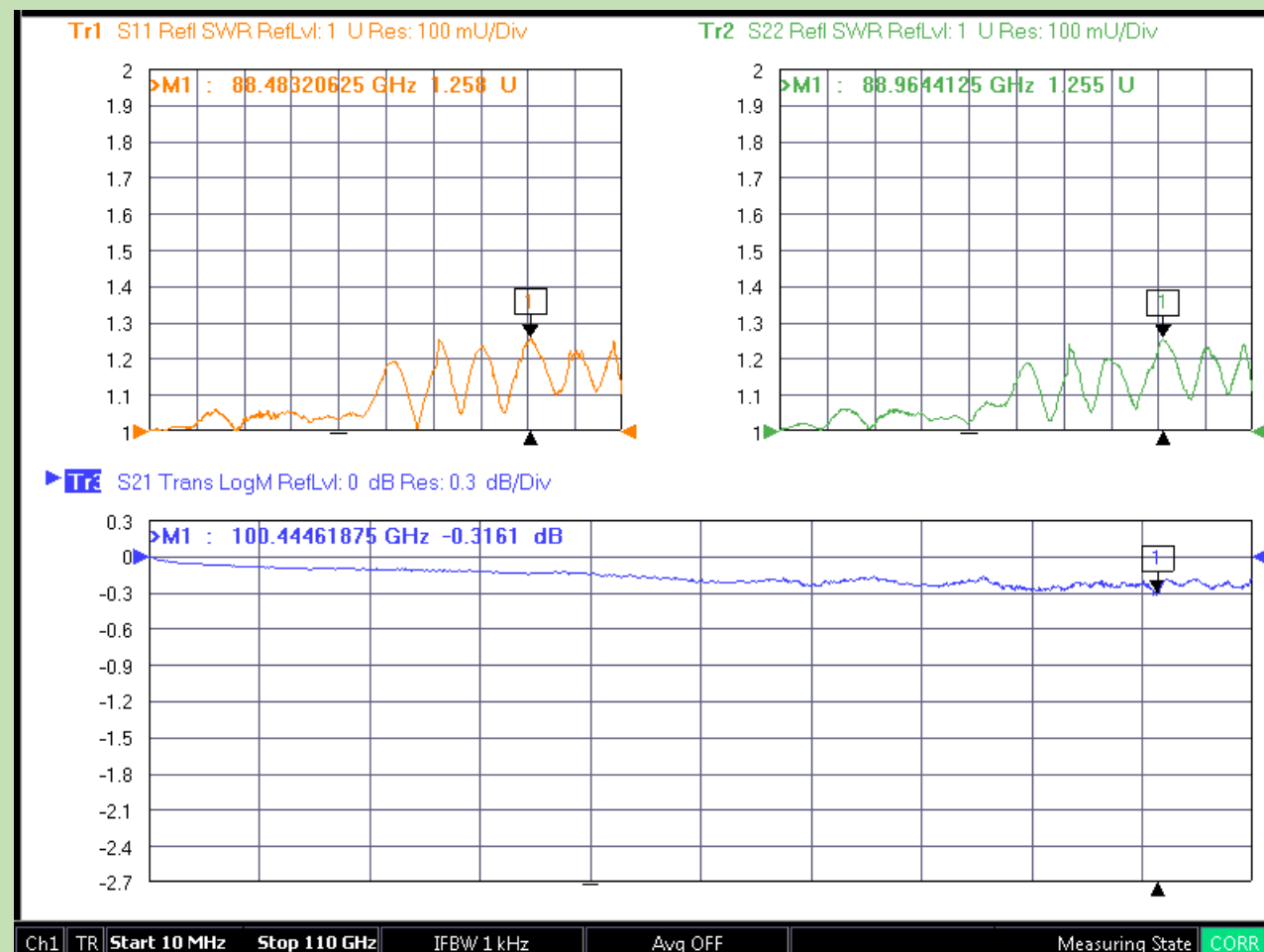


Adapter 1.0mm to 1.0mm



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		



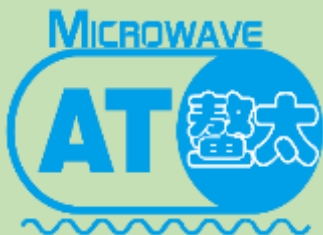
Adapter: WR-10 to 1.0 Coaxial

☐	PN	Data Sheet	Lead time	Type	Low Fre /GHz	High Fre /GHz	Connector #1	Connector #2	IL /dB	VSWR
☐	AT-WC-101F-E1		Stock	Waveguide to Coaxial	75	110	WR-10	1.0 Female	1.0	1.2
☐	AT-WC-101M-E1		Stock	Waveguide to Coaxial	75	110	WR-10	1.0 Male	1.0	1.2



Attenuator: High Precision Fixed Attenuator

☐	PN	Data Sheet	Lead time	Type	Freq Low /GHz	Freq High /GHz	ATT /dB	Control	Power Rating	Connector
☐	AT-FAT06-10HPV		6-8 Weeks	WG-High Power	75	110	6	-	10W	WR-10
☐	AT-FAT03-10HPV		6-8 Weeks	WG-High Power	75	110	3	-	10W	WR-10
☐	AT-FAT10-10HPV		6-8 Weeks	WG-High Power	75	110	10	-	10W	WR-10
☐	AT-FAT20-10HPV		Stock	WG-High Power	75	110	20	-	10W	WR-10
☐	AT-FAT30-10HPV		6-8 Weeks	WG-High Power	75	110	30	-	10W	WR-10
☐	AT-FAT40-10HPV		6-8 Weeks	WG-High Power	75	110	40	-	10W	WR-10



Attenuator: Variable Attenuator

☐	PN	Data Sheet	Lead time	Type	Freq Low /GHz	Freq High /GHz	ATT /dB	Control	Power /Rating	Connector
☐	AT-VVA-75110G-25		Stock	W Band	75	110	0-25	-1.2 to 0V	+15dBm	WR-10
☐	AT-VVA-75110G-25-29F		8-10 Weeks	W Band	75	110	0-25	-1.2 to 0V	+15dBm	WR-10
☐	AT-VVA-75110G-35		Stock	W Band	75	110	0-35	-1.2 to 0V	+15dBm	WR-10

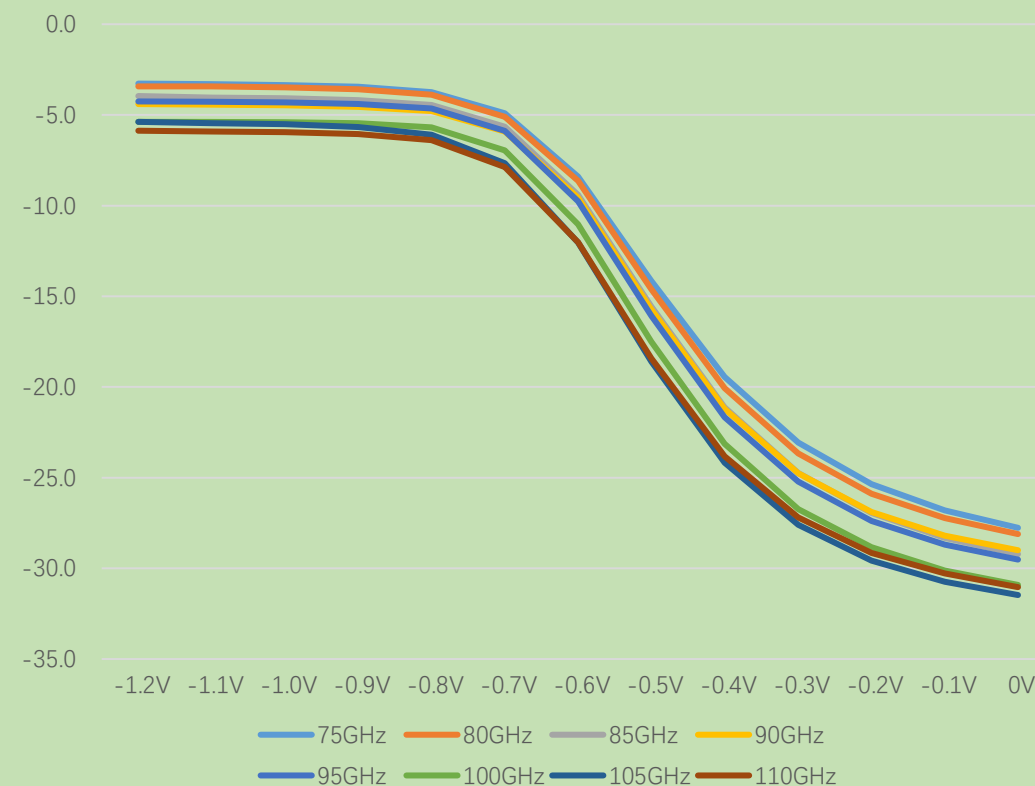
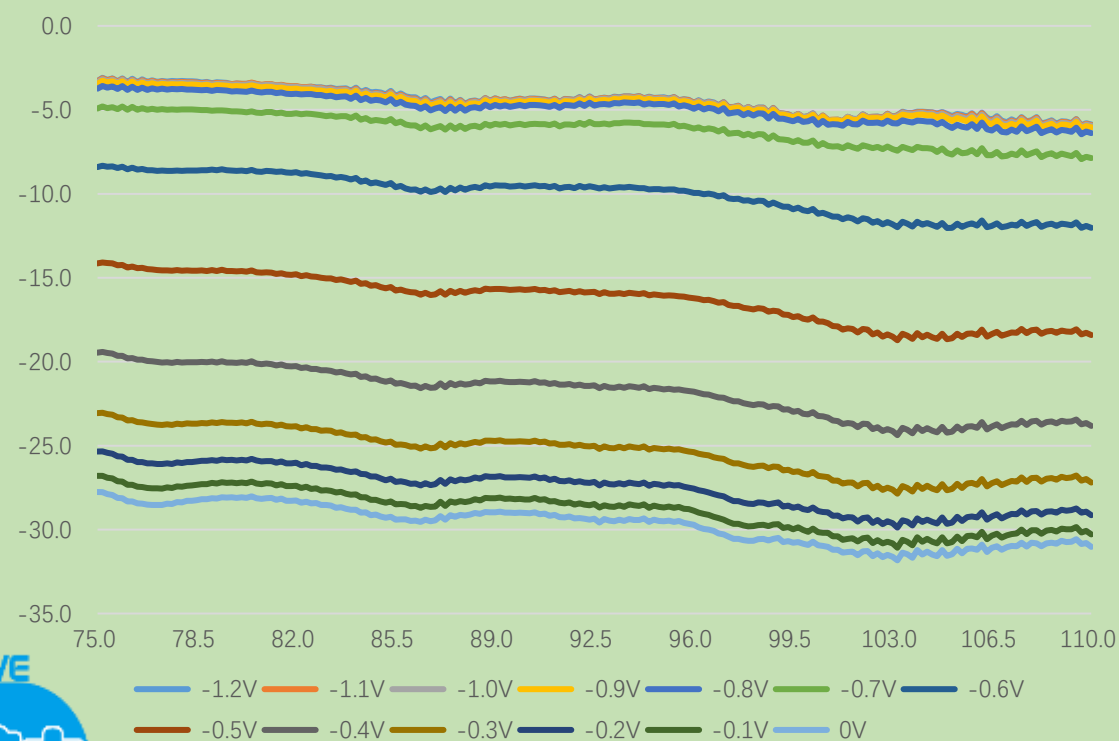
☐	PN	Data Sheet	Lead time	Type	Freq Low /GHz	Freq High /GHz	ATT /dB	Control	Power Rating	Connector
☐	AT-LSA-10M1		Stock	Level Setting Attenuator	75	110	0-30	Manual	0.1W	WR-10



Voltage Variable Attenuator

PN: AT-VVA-75110G-25

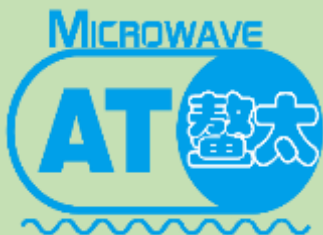
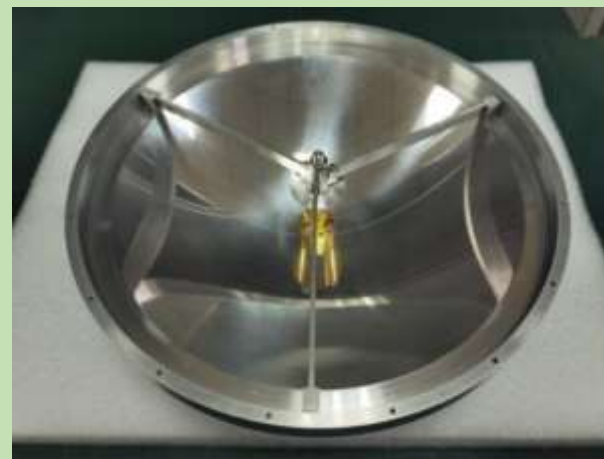
AT-VVA-75110G-35



Antenna:

☐	PN	Data Sheet	Lead time	Type	LowFreq /GHz	HighFreq /GHz	Gain /dB	Wave guide
☐	AT-SGA-15-10B		6-8 Weeks	Stand Gain Horn	75	110	15	WR-10
☐	AT-SGA-20-10B		Soon	Stand Gain Horn	75	110	20	WR-10
☐	AT-SGA-25-10B		Stock	Stand Gain Horn	75	110	25	WR-10

☐	PN	Data Sheet	Lead time	Type	LowFreq /GHz	HighFreq /GHz	Gain /dB	Wave guide
☐	AT-PBA-10A-2.0		Stock	Probe Antenna	75	110	6.5	WR-10



Directional/Dual-Coupler

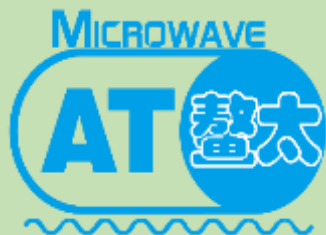
☐	PN	Data Sheet	Lead Time	Type	Coupling /dB	Freq Low /GHz	Freq High /GHz	Directivity /dB	Power Rating	Connector
☐	AT-C06-10A		10-12 Weeks	W-Band	6dB	75	110	35	10W	WR-10
☐	AT-C10-10A		Stock	W-Band	10dB	75	110	35	10W	WR-10
☐	AT-C17-10A		10-12 Weeks	W-Band	17dB	75	110	30	10W	WR-10
☐	AT-C20-10A		10-12 Weeks	W-Band	20dB	75	110	25	10W	WR-10
☐	AT-C30-10A		Stock	W-Band	30dB	75	110	20	10W	WR-10
☐	AT-C40-10A		Stock	W-Band	40dB	75	110	20	10W	WR-10

☐	PN	Data Sheet	Leadtime	Coupling /dB	Type	Freq Low /GHz	Freq High /GHz	Directivity /dB	Power Rating	Connector
☐	AT-DC10S-10V		10-12 Weeks	10dB	W-Band	75	110	35	10W	WR-10
☐	AT-DC26S-10V		10-12 Weeks	20dB	W-Band	75	110	35	10W	WR-10
☐	AT-DC30S-10V		10-12 Weeks	30dB	W-Band	75	110	30	10W	WR-10
☐	AT-DC20S-10V		Stock	20dB	W-Band	75	110	35	10W	WR-10



Filter: BPF, HPF, LPF

PN	Data Sheet	Type	Lead time	Center Frequency/GHz	Low Freq /GHz	High Freq /GHz	IL /DB	RL/DB	Connector
AT-BPF-7585-10		W Band	Stock	80	75	85	-1	10	WR-10
AT-BPF-70118-10A-FR		W Band	Stock	94	70	118	-1	10	WR-10
AT-BPF-7585-10A		W Band	6-8 Weeks	80	75	85	-1	10	WR-10
AT-BPF-8088-10A		W Band	6-8 Weeks	84	80	88	-1	10	WR-10
AT-BPF-9098-10A		W Band	Stock	94	90	98	-1	15	WR-10
AT-BPF-9296-10A		W Band	6-8 Weeks	94	92	96	-1	15	WR-10
AT-BPF-9396-10A		W Band	Stock	94,5	92,5	96,5	-1	15	WR-10
AT-BPF-92100-10A		W Band	Stock	96	92	100	-1	15	WR-10
AT-BPF-98102-10A		W Band	6-8 Weeks	100	98	102	-1	15	WR-10
AT-BPF-100110-10A		W Band	Stock	105	100	110	-1	15	WR-10
AT-BPF-102108-10A		W Band	6-8 Weeks	105	102	108	-1	15	WR-10



Band-Pass Filter



AT-BPF-70118-10A-FR

W Band Waveguide Band-Pass Filter, WR-10

AT-BPF-70118-10A-FR

70-118GHz Band-Pass Filter, WR-10

Far Rejection upto 170GHz



Product Overview

AT Microwave offers high performance band waveguide band-pass filter from 26.5-330GHz. Other frequency bands and rejection requirement can provide according to request.

Based on our excellent design work, precise machine tolerance and outstanding quality plating, we can provide band pass filter with low insertion loss, good return loss and high rejection at the same time.

More information, please visit www.atmicrowave.com



Waveguide Section

RSW Series: Rugged Straight Waveguide

AT-RSW-2.0-WR10,
Full W band, 2.0inch

RWT Series: Rugged Waveguide Transition

AT-RWT-1210-1.0: WR-12 to WR-10, 75-90GHz
AT-RWT-1008-1.0: WR-10 to WR-08, 90-110GHz

