



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RLNAW42C

WR42 Low Noise Amplifier 18GHz ~ 26.5GHz



Note: The photo is for illustration purposes only.
Please refer to the outline drawing.



Features

- Gain: 50dB Typical
- Noise Figure: 2.2dB Typical
- P1dB Output Power: +20dB m Typical
- Convenient AC Power Input.

Typical Applications

- Wireless Infrastructure
- Military & Aerospace
- Test & Measurement

Electrical Specifications, $T_A = +25^\circ\text{C}$

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	18		22	22		26.5	GHz
Gain	45	53		45	53		dB
Gain Flatness		± 0.5	± 1.0		± 2.0		dB
Gain Variation Over Temperature (-45 ~ +85)		± 2.0			± 2.5		dB
Noise Figure		2.2	2.8		2.2	2.8	dB
Input VSWR		1.3	2.0		1.3	2.0	: 1
Output VSWR		2.0			2.0		: 1
Output Power for 1 dB Compression (P1dB)	16	20		15	18		dBm
Saturated Output Power (Psat)		23			23		dBm
Output Third Order Intercept (IP3)		24			24		dBm
Isolation S12		-60			-55		dB
Supply Current (AC110/220V)		35/18			35/18		mA
Weight	/						ounces
Impedance	50						Ohms
Input / Output Connectors	WR42						
Finish	Standard: Gold 40 micron; Nickel 220 micron thickness						
	Option: Gold 80 micron; Nickel 180 micron thickness						
Material	Aluminum						
Package Sealing	Epoxy Sealed						

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Absolute Maximum Ratings

Operating Voltage	AC110~220V
RF Input Power	-20dBm

Biasing Up Procedure

Step 1	Connect Ground Pin
Step 2	Connect input and output
Step 3	Turn on AC110~220V
Power OFF Procedure	
Step 1	Turn off AC110~220V
Step 2	Remove RF connection
Step 3	Remove Ground.

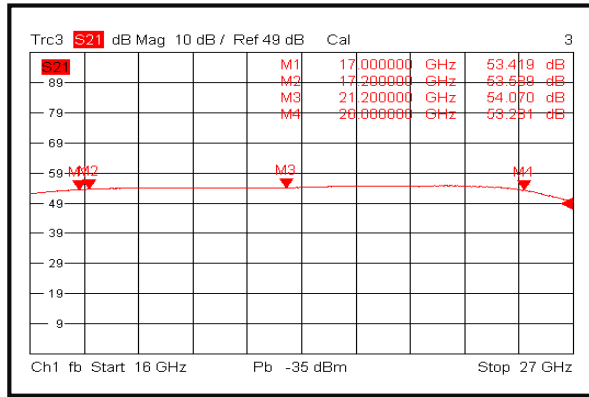
Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	MIL-STD-883	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)		MIL-STD-883 (For Hermetically Sealed Units)

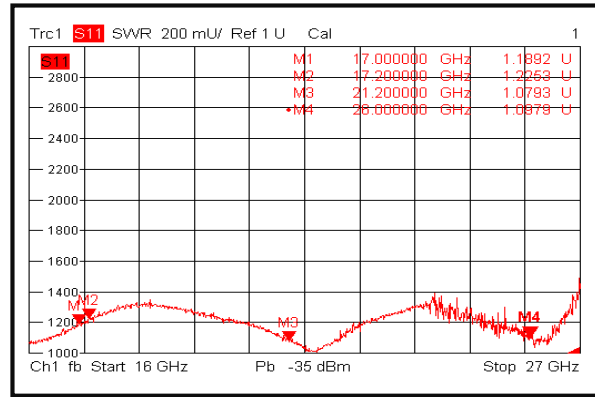


Typical Performance Plots

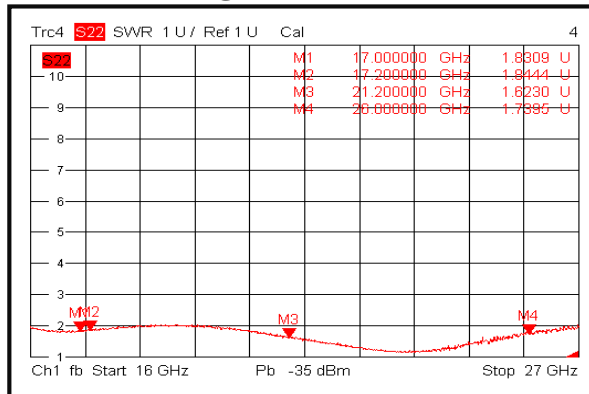
Gain @+25°C



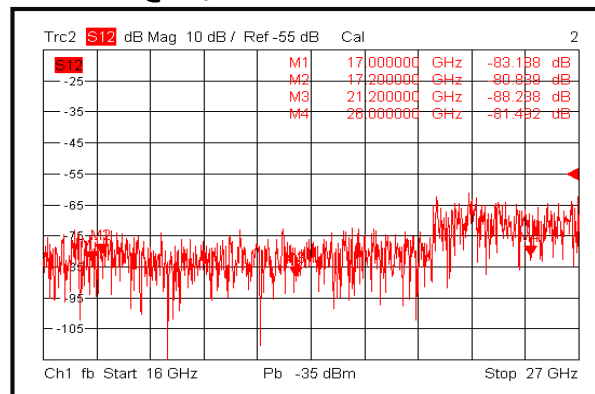
Input VSWR @+25°C



Output VSWR @+25°C

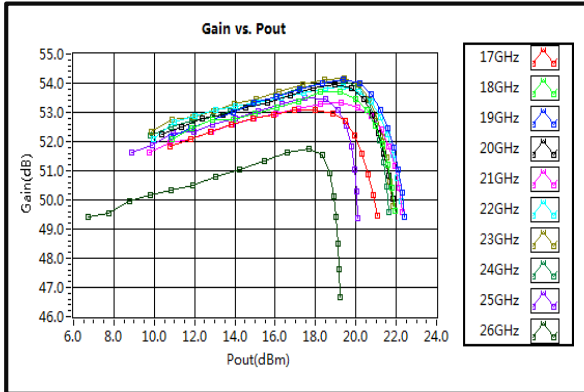


Isolation @+25°C

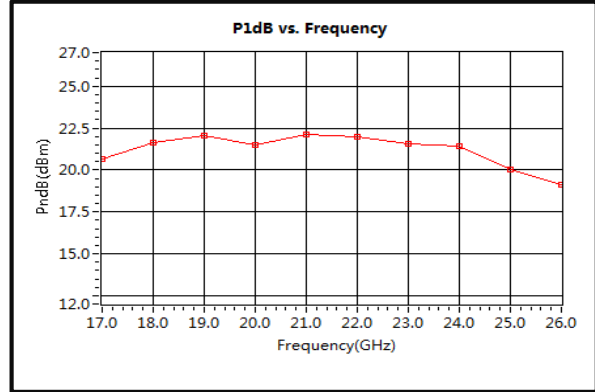




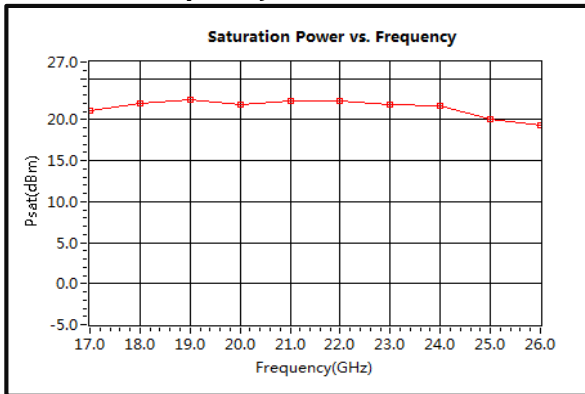
Gain vs. Output Power



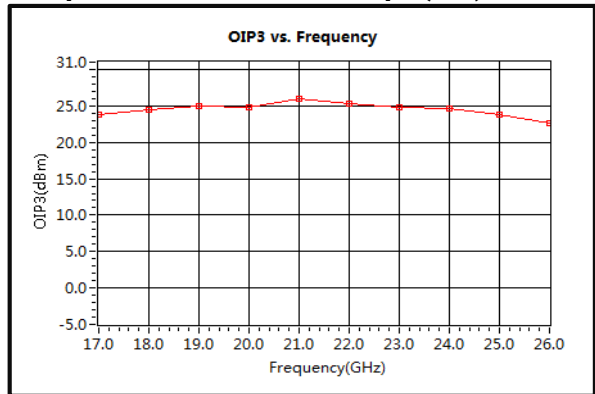
P1dB vs. Frequency



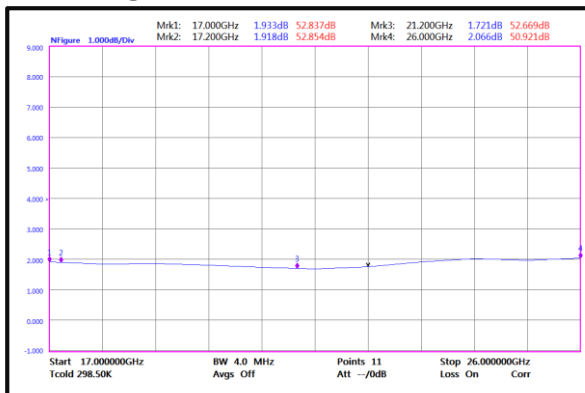
P3dB vs. Frequency



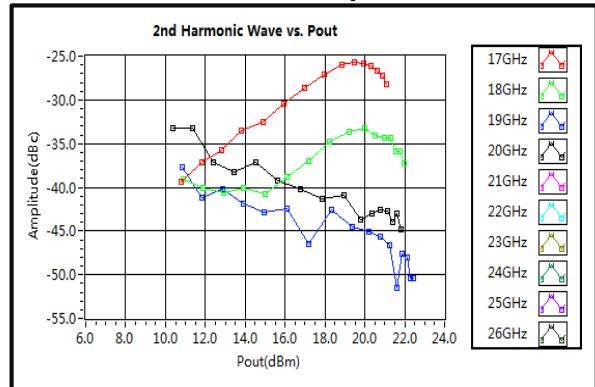
Output Third Order Intercept (IP3)



Noise Figure



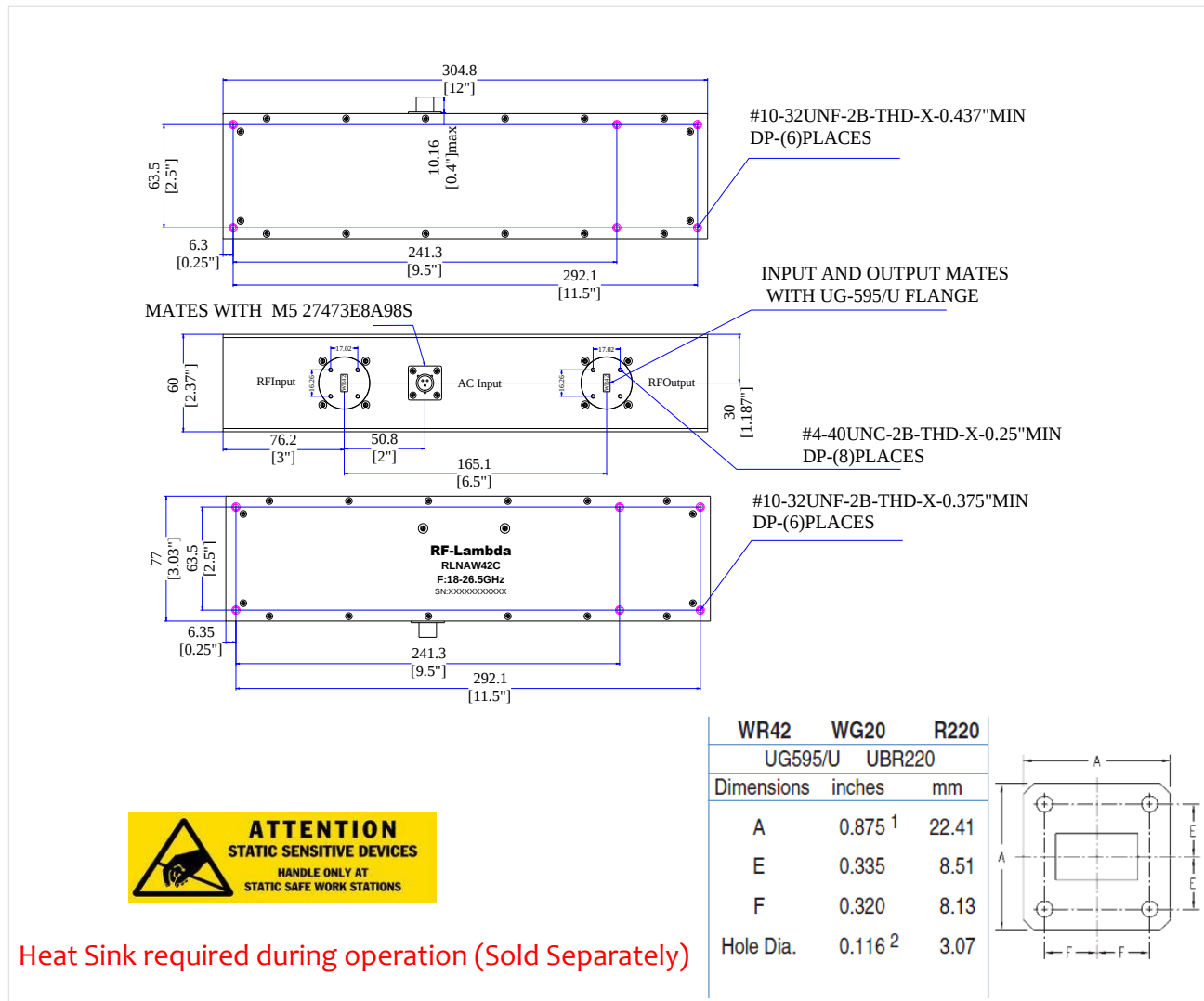
2nd Harmonic Wave Output Power





Outline Drawing:

All Dimensions in mm [inches]



Ordering Information

Part No.	ECCN	Description
RLNAW42C	EAR99	18-26.5GHz WR42 Low Noise Amplifier

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