### Mechanics & Electronics Inc.

## **Tropo Preamplifiers**

# ALN-23W 23cm Tropo Preamplifier



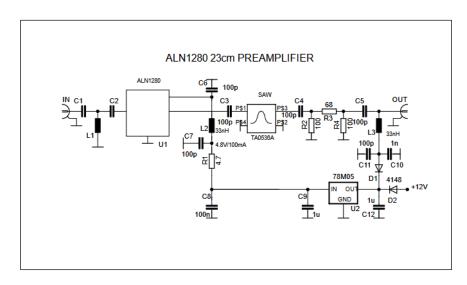
#### Introduction

The ALN-23W 23cm a 2 stage Tropo Preamplifier high dynamics, selective and low-noise preamplifier for 1296-1300 MHz.

We offer it for Tropo operation. The built in SAW filter gives clean signal and selectivity.

The preamplifier built in a stable ALU box furnised with SMA female connectors. The small dimension is optimal to use it near of your antennas in separate box.

Technical data	ALN-23W	
Frequency range:	1290-1300 MHz	
Noise figure @ 22°C	Typ < 0.5dB	
Noise figure @ -18C	Typ < 0.35 dB	
Gain S21, typ.:	28 dB	
Input return loss	>20 dB	
Output return loss	>10 dB	
OIP3:	>+32dBm	
IIP3:	typ. +4 dBm	
Device:	ALN1280	
Max. Input level:	+20dBm	
Operating voltage:	+10+15V	
Power consumption:	100mA	
Dimensions:	85x50x20mm (w.conn)	
Weight:	Weight: 75g	
RF connectors:	2x SMA female	



ALN-23W Circuit Diagram.

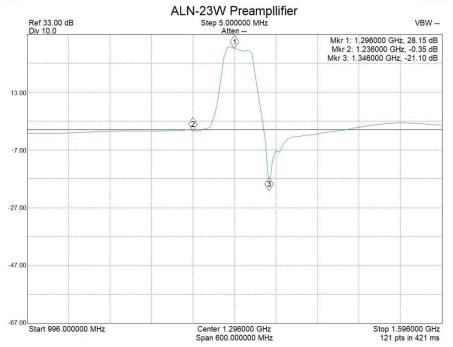
Direct		NOISE & GAIN			CALIBRATED	
RBW:	1 MHz	RF Atten.	0 dB	2 nd Stage Corr.	On	
A vera ge:	1	Auto Ref Level	On	I mage Rejection	4	
		Ct	rrent Value	V2		
RF:	1.32 GHz	ENR	6.2 dB	NF.	0.53 dB	
LO:		Loss In	0 dB	Noise Temp.	37.98 K	
IF:	444	Loss Out	0 dB	Gain	28.63 dB	

Frequency List Results			
RF	NF	Noise Temp	Gain
1.29 GHz	0.54 dB	38.47 K	30.04 dB
1.30 GHz	0.51 dB	36.04 K	29.04 dB
1.31 GHz	0.48 dB	34.23 K	29.15 dB
1.32 GHz	0.53 dB	37.98 K	28.63 dB
1.33 GHz	0.65 dB	46.98 K	14.73 dB

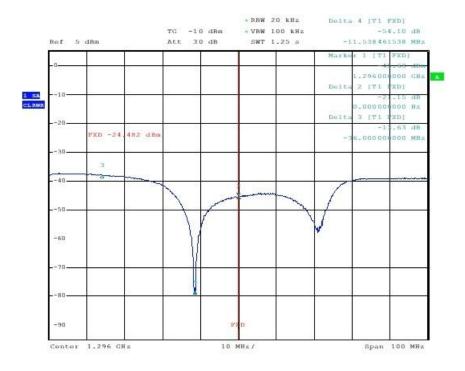
ALN-23W NF Measurements @22°C

Version 3.9.0

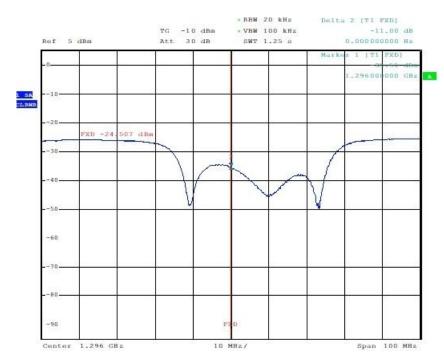




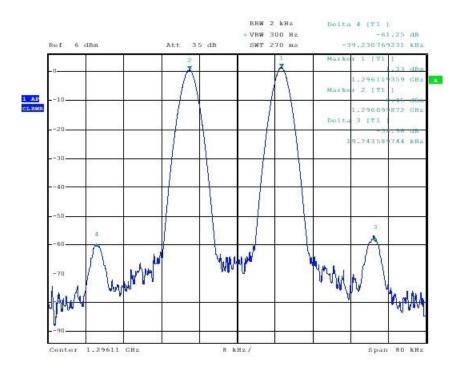
#### ALN-23W 500MHz BW



ALN-23W Input Return Loss.



**ALN-23W Output Return Loss** 



OIP3 +32.23dBm

Direct		NOI	SE & GAIN		CALIBRATED	
RBW:	1 MHz	RF Atten	0 dB	2 nd Stage Corr.	On	
A vera ge:	1	Auto Ref Level	On	I mage Rejection		
		Cu	rrent Value	2		
RF:	1.29 GHz	ENR	6.2 dB	NF.	0.35 dB	
LO:		Loss In	0 dB	Noise Temp.	24.62 K	
IF:		Loss Out	0 dB	Gain	31.23 dB	

Frequency List Results				
RF	NF	Noise Temp	Gain	
1.29 GHz	0.35 dB	24.62 K	31.23 dB	
1.30 GHz	0.36 dB	25.25 K	3 0.69 dB	

NF Meausurements on -18°C