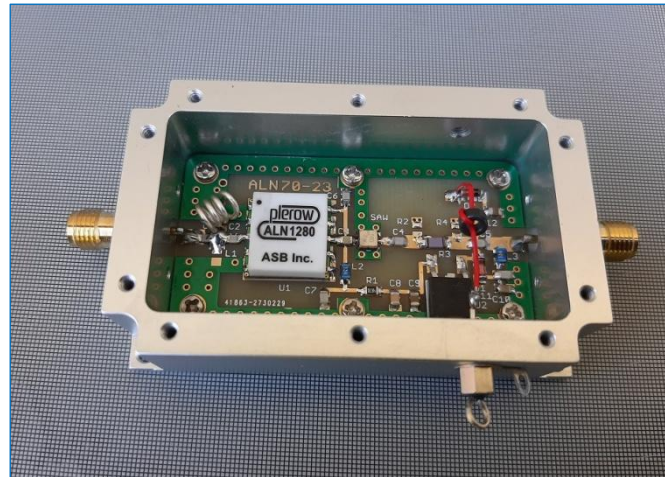


# Mechanics & Electronics Inc.

## Tropo Preamplifiers

### ALN-23W 23cm Tropo Preamplifier



#### Introduction

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

We offer it for Tropo operation. The built-in SAW filter provides a clean signal and good selectivity. The preamplifier is built into a stable ALU box furnished with SMA female connectors. The small dimensions are optimal for use near your antennas in a separate box.

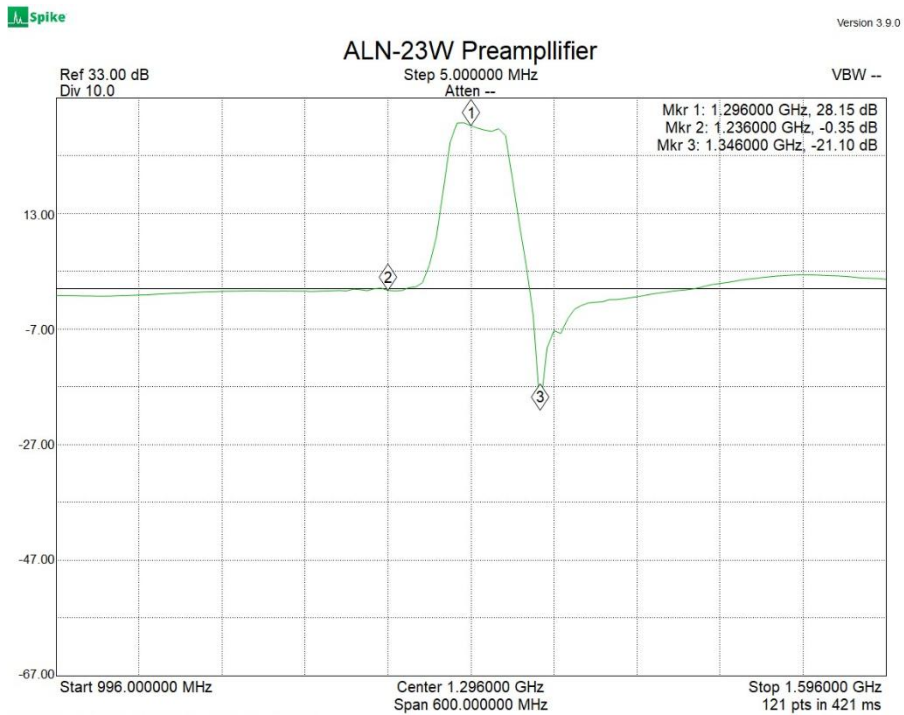
Technical data	ALN-23W
Frequency range:	1290-1300 MHz
Noise figure @ 22°C	Typ < 0.6dB
Noise figure @ -18C	Typ < 0.4dB
Gain S21, typ.:	28 dB
Input return loss	>20 dB
Output return loss	>10 dB
OIP3:	>+32dBm
IIP3:	typ. +4 dBm
Device:	ALN1280
Max. Input level:	+20dBm
Operating voltage:	+10...+15V
Power consumption:	100mA
Dimensions:	85x50x20mm (w.conn)
Weight:	75g
RF connectors:	2x SMA female

ALN-23W Noise Figure measurements

NOISE & GAIN					CALIBRATED
Direct					
RBW:	1 MHz	RF Atten.	0 dB	2nd Stage Corr.	On
Average:	1	Auto Ref Level	On	Image Rejection	...
Current Value					
RF:	1.32 GHz	ENR	6.2 dB	NF:	0.53 dB
LO:	...	Loss In	0 dB	Noise Temp.	37.98 K
IF:	...	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	

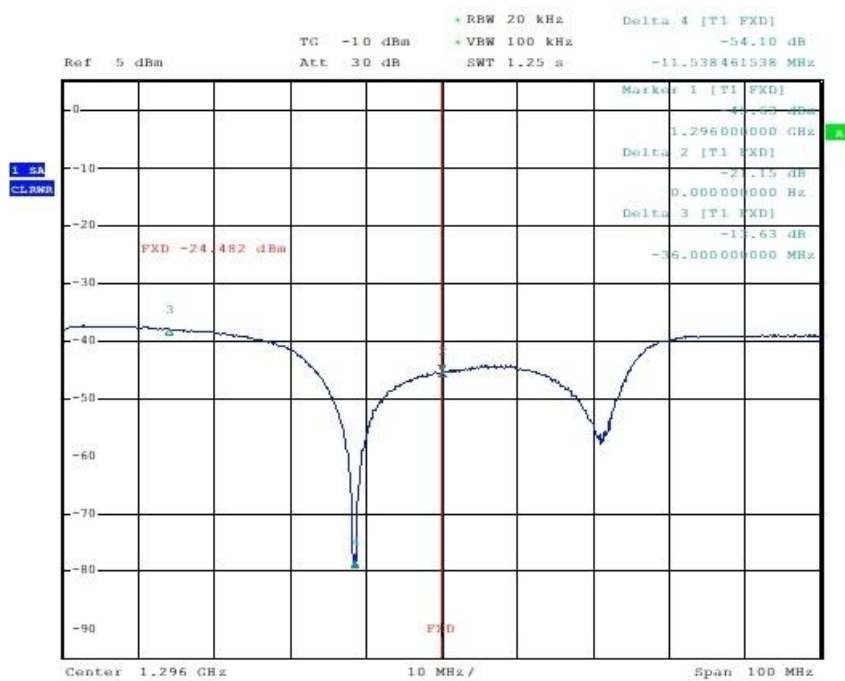
### ALN-23W NF Measurements @22°C



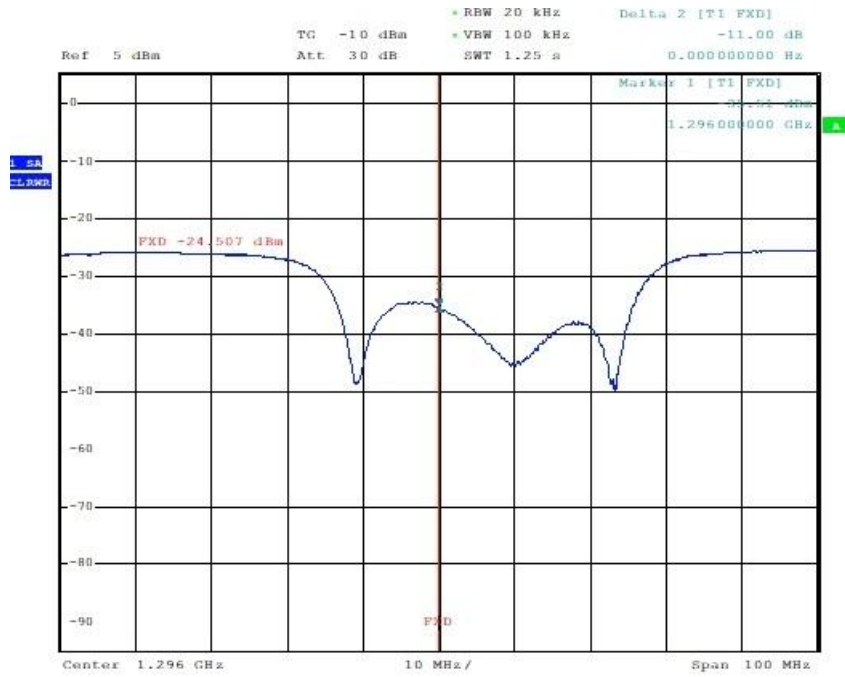
### ALN-23W 500MHz BW



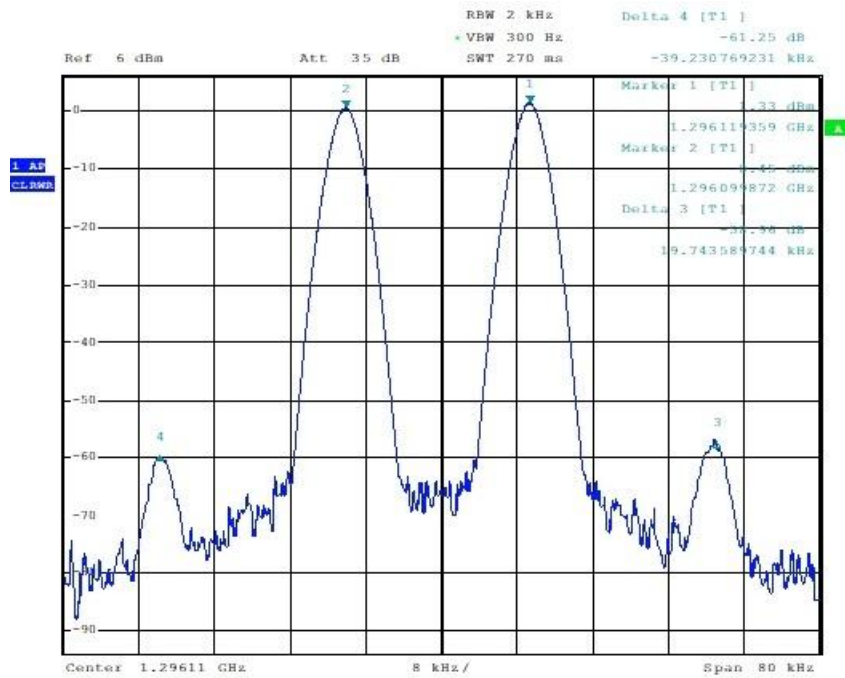
1ALN-23 wide



ALN-23W Input Return Loss.



ALN-23W Output Return Loss



OIP3 +32.23dBm

NOISE & GAIN						CALIBRATED
Direct						
RBW:	1 MHz	RF Atten.	0 dB	2nd Stage Corr.	On	
Average:	1	Auto Ref Level	On	Image Rejection	...	
Current Value						
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	30.69 dB			

NF Measurements on -18°C