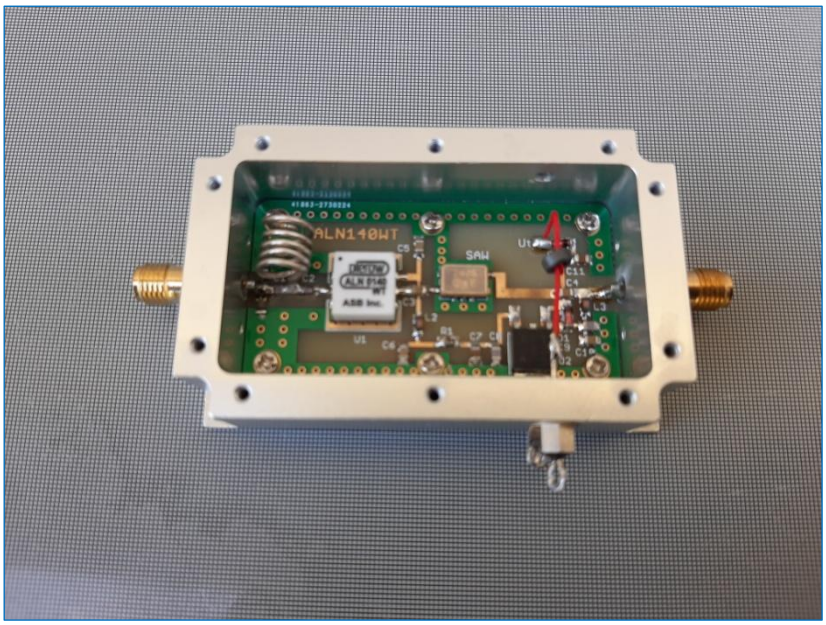
Mechanics & Electronics Inc.

Tropo Preamplifiers

ALN-2 2m tropo Preamplifier



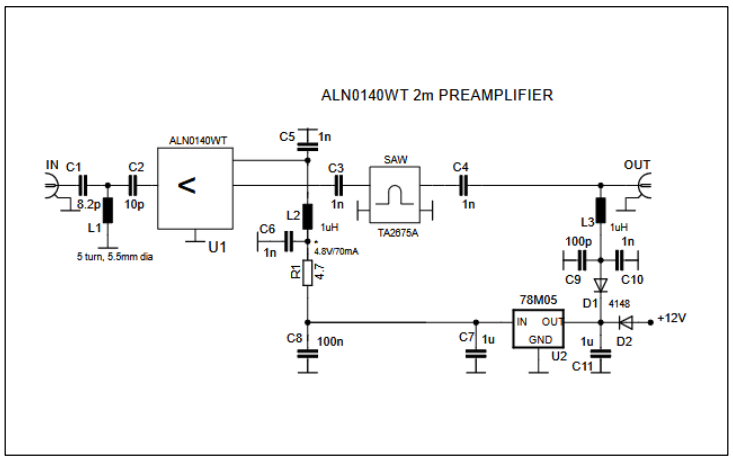
Introduction

The ALN-2 2m Preamplifier a high dynamics, selective and low-noise preamplifier for 144-148 MHz, built by ASB ALN0140WT amplifier module.

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

The preampllifier 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-2**
Frequency range:	144-148MHz
Noise figure @ 22°C	Typ < 0.6dB
Noise figure @ -18C	Typ < 0.3dB
Gain S21, typ.:	>+22 dB
Input return loss	>+9 dB
Output return loss	>23 dB
OIP3:	>+32.3dBm
IIP3:	>+ 10dBm
Device:	ASB ALN0140WT
Max. Input level:	22dBm
Operating voltage:	+10…+15V
Power consumption:	70mA
Dimensions:	85x50x20mm (w.conn)
Weight:	75g
RF connectors:	2x SMA female



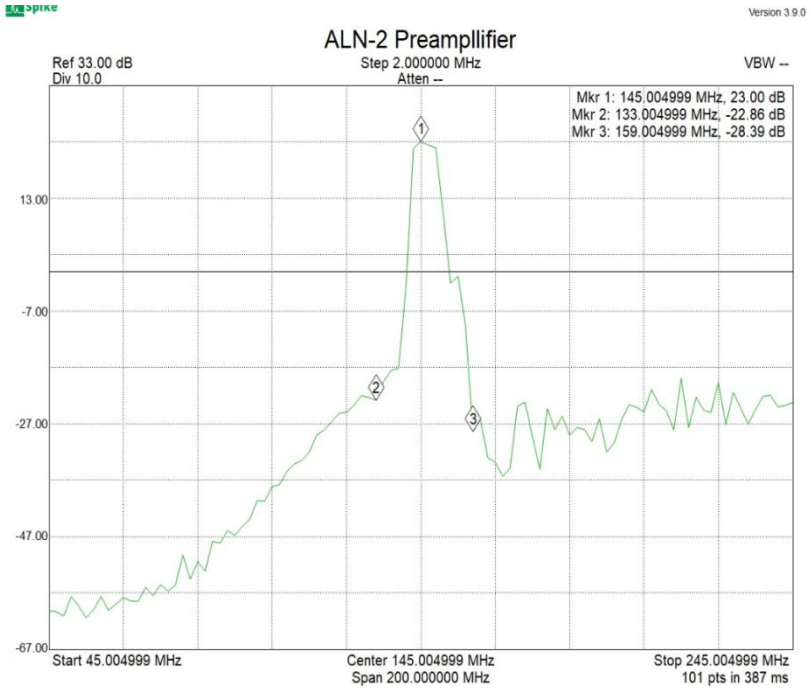
ALN-2 Preamplifier Circuit diagram

Direct		NOISE & GAIN			CALIBRATED
RBW:	1 MHz	RF Atten.	0 dB	2nd Stage Corr.	On
Average:	1	Auto Ref Level	On	Image Rejection	...
		Current Value			
RF:	145.9 MHz	ENR	6.4 dB	NF.	0.63 dB
LO:	...	Loss In	0 dB	Noise Temp.	45.53 K
IF:	...	Loss Out	0 dB	Gain	23.17 dB

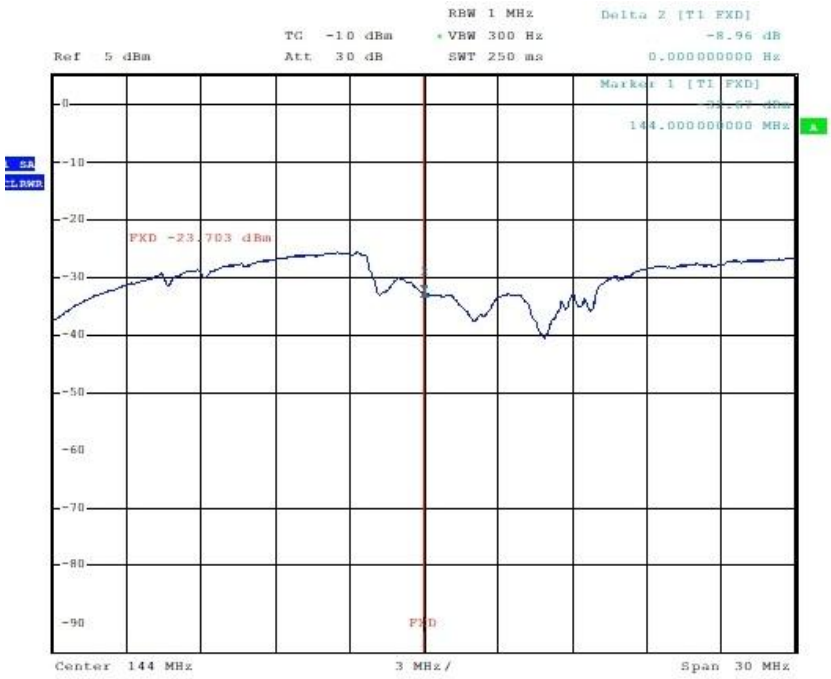
Frequency List Results

RF	NF	Noise Temp	Gain
144.00 MHz	0.59 dB	42.58 K	22.90 dB
144.10 MHz	0.63 dB	45.01 K	23.01 dB
144.20 MHz	0.65 dB	46.59 K	22.83 dB
144.30 MHz	0.59 dB	42.55 K	23.00 dB
144.40 MHz	0.60 dB	43.21 K	23.23 dB
144.50 MHz	0.61 dB	43.60 K	23.33 dB
144.60 MHz	0.61 dB	43.48 K	23.11 dB
144.70 MHz	0.62 dB	44.86 K	22.99 dB
144.80 MHz	0.57 dB	40.84 K	23.15 dB
144.90 MHz	0.62 dB	44.34 K	23.10 dB
145.00 MHz	0.62 dB	44.82 K	23.03 dB
145.10 MHz	0.58 dB	41.11 K	23.38 dB
145.20 MHz	0.60 dB	42.66 K	23.10 dB
145.30 MHz	0.61 dB	44.03 K	23.38 dB

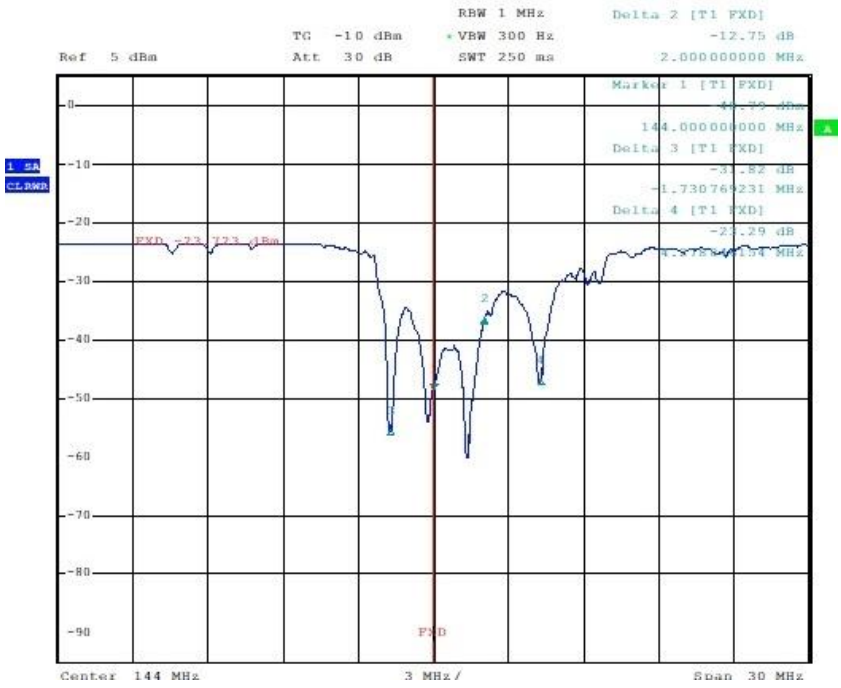
ALN-2 NF measurements



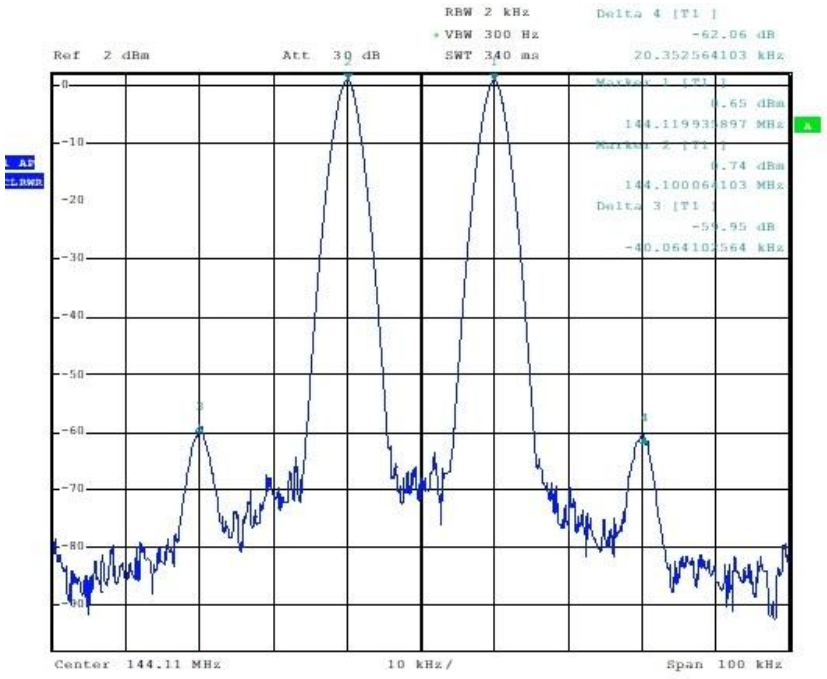
ALN-2 200MHz BW



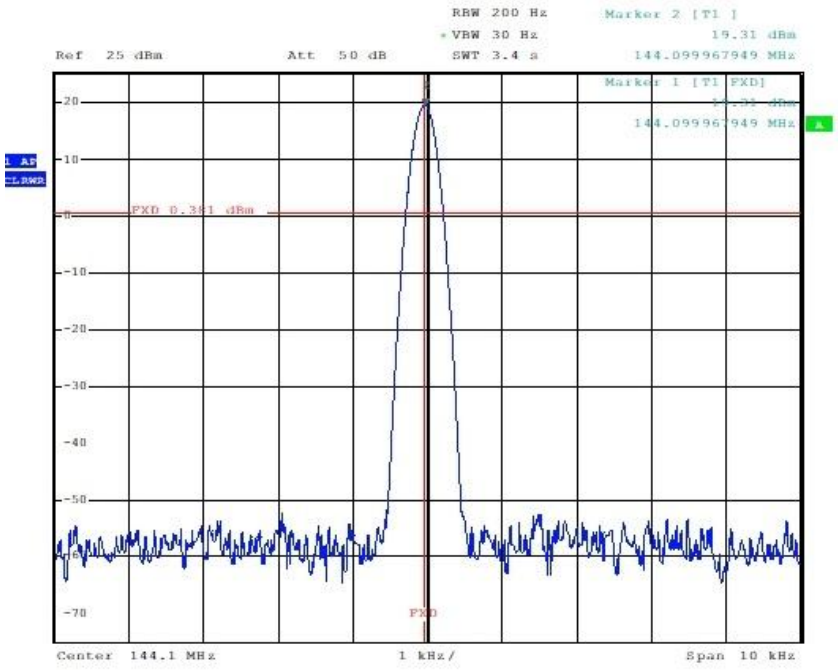
Input Return Loss



Output Return Loss.



OIP3 +32.4dBm



1dB Compression Point.