

Product Specification

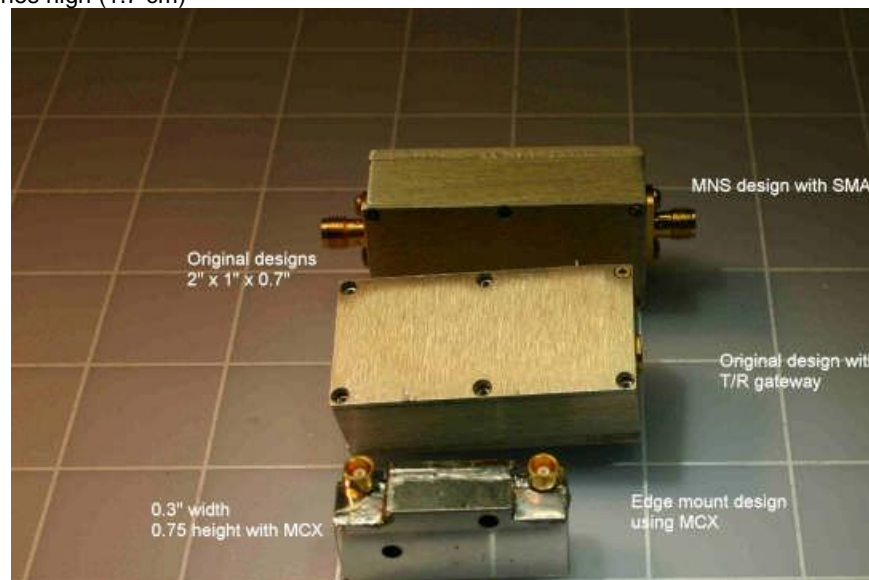
Proton (¹H) NMR Preamp

This document outlines the performance specifications of the Low Noise Preamp for ¹H Imaging and Spectroscopy. This preamp is designed to receive the D.C. bias on the output coax connector but provisions can be made to have an external feed-thru cap provided bias. The RF connectors can either be SMA or MCX and the preamp is housed in an Aluminum enclosure for harsh environment applications, other packaging option available. This preamp can be tuned to operate over the full range of X nucleus NMR frequencies from 16 to 120.20MHz in addition to the ¹H frequencies of 63.86 and 127.72 MHz (1.5T and 3T respectively).

Parameter	Specification	Conditions	Comments
Gain	3T 1.5T	27<G<31 28<G<32	50 terminations Typical 29 dB
Noise Figure	3T 1.5T	<0.5 dB	50 terminations Typical < 0.40 dB Typical < 0.35 dB
Power requirements	50 to 60mA 8 to 15 volts	Typical scan conditions	Internal regulator
1db compression	4dBm output	50 terminations	For both 1.5T and 3T designs
Third order Intercept	16 dBm output	50 terminations	2 tone test 1MHz apart
Output return loss	>15 dB	50 terminations	Can be adjusted
Input Zin	3T 1.5T	3.0 + 38j 1.5 + 32j	50 terminations Adjusted for min NF
Input Zin	3T 1.5T	< 2 real	50 terminations Adjusted for min Zin

Aluminum enclosure dimensions:

- 2 inches long (5.1 cm)
- 1 inch wide (2.5cm)
- 0.65 inches high (1.7 cm)



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