

# **INDOOR TV ANTENNA AND BOOSTER**

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by

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## Abstract

Television antennas are manufactured in two different types, called "Indoor" and "Outdoor" antennas. My aim of this research was to produce an indoor antenna and booster for domestic use to receive high quality images. Normally indoor antennas are used in areas where we can find high strength of signals, but I wanted to implement an indoor antenna which can be used under weak signals.

I used the log periodic antenna theory to design the antenna as it is used where a wide range of frequencies are needed while still having moderate gain and directionality. I developed my antenna using Aluminium rods and MDF boards as raw materials.

I have designed the amplifying circuit using the 2SC3355 transistor which is used for low noise amplifiers as the amplifying transistor. I used three of them to maximize the gain of detected signal.

This final product was able to detect signals from some TV channels within the Badulla area. But the picture quality did not come to the expected level. However it managed to detect the signals in very weak signal conditions. The transmission signal strength of Sri Lanka is very poor, so it is very hard to develop an indoor antenna which can work everywhere. And Sri Lankan TV channels use low frequencies in UHF range. So the design of the antenna getting bigger than expected.