

**IMPROVEMENT ON THE RECEPTION OF WEATHER
SATELLITE RECEIVER AT ITM SITE BY MEANS OF A
BANDPASS FILTER, VHF AMPLIFIER AND BALUN**

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ABSTRACT

A VHF filter and amplifier is designed to improve the gain of the receiver antenna, in order to achieve its specification. The amplifier was designed using the S-parameters with the aid of Smith chart to get the matching network of the amplifier.

Impedance matching in antenna measurement is achieved by means of a balun to overcome the mismatch between the antenna and the signal generator. Key components of the system are a spectrum analyzer, signal generator, balun, bandpass filter and a VHF amplifier.

TABLE OF CONTENTS

CHAPTER	DESCRIPTION	PAGE
1	INTRODUCTION	
1.1	Introduction to weather satellite	1
1.2	Ground station	2
1.3	Receiving antenna	3
1.3.1	Parabolic antenna	3
1.3.2	Yagi-Uda antenna	4
1.3.3	Helical antenna	8
1.4	Antenna properties	9
1.4.1	Polarization	9
1.4.2	Beamwidth	10
1.4.3	Directivity	10
1.4.4	Gain	11
1.5	Problems with the ground station	12
2	ANTENNA MEASUREMENT	
2.0	Equipment setup	13
2.1	Field regions	15
2.1.1	Reactive near-field region	15
2.1.2	Radiating near-field (Fresnel) region	16
2.1.3	Far-field (Fraunhofer) region	16
2.2	Gain measurement	16
2.3	Measurement results	18
2.4	Discussion	21

CHAPTER 1

INTRODUCTION

1.1 Introduction to weather satellite

The Geostationary Operational Environmental Satellite (GEOS) is a satellite that provides a wealth of information, not only about the atmosphere but also about radiation from the sun and condition from the sea. Satellites are classified according to their applications, that is, whether they are used to describe earth and weather condition, in business systems, or in analog or digital voice and video communications.

National Oceanic and Atmospheric Administration (NOAA) is one of many series of satellites that provides services, which describe conditions on land and water surfaces of the earth. The Television Infrared Observation Satellite (TIROS-NOAA) produces many other signals in additions to the automatic picture transmission (APT) signal referred in table 1.1. The APT signal is a very important signal, which will be received from polar-orbiting satellites operating within the specified frequency range.

A VHF receiver will receive some of the transmitted data and other data will be received via a GOES down-converter used in conjunction with the VHF receiver. The VHF down-link data contains APT information as well as other vital information. APT data is amplitude-modulated on a 2.4 kHz subcarrier which modulates a 137.5 MHz carrier. [1]