

SATELLITE COMMUNICATION SYSTEM

Mod. MW-AS/EV

INTRODUCTION

The SATELLITE COMMUNICATION SYSTEM is designed to study and test lines, antennas and transmissions used in the field of microwaves.

In detail, it is possible to analyse and carry out experiments in the principal aspects of microwaves and their application to communication systems:

- Active and passive components
- Waveguides and antennas for microwaves
- Audio/Video/Data communication systems and Measurements on microwaves
- Satellite transponder simulation



TRAINING PROGRAM:

- General microwave theory
- Overview of electronic devices and passive components of the laboratory
- Characteristics of:
 - microwave components
 - waveguide and flange
 - Horn antennas and parabolic reflector
 - reflection and polarization system
- Oscillator
- Gain and radiation diagram of microwave antennas
- Link attenuation
- Passive repeaters (mirrors)
- Overview of electronic devices and antennas making up a satellite transponder
- Frequency conversion: up converter and down converter
- Audio/Video Satellite communication system with Satellite Ku band repeater simulation
- Modulation and transmission of microwave signals
- Reception and demodulation of microwave signals
- Frequency conversion with local oscillator and mixer
- Audio/Video point-to-point communication system
- Audio/Video Satellite communication system

TECHNICAL SPECIFICATION:

- Silver-plated internal waveguide
- 2 waveguides – coaxial adapter
- 4 coax fixed attenuators:
 - Impedance: 50 Ω
 - SMA/SMA connectors
 - Range: DC to 3000 MHz
 - Attenuation: 3, 6, 10, 20dB
- 1 coax detector:
 - Input impedance: 50 Ω
 - SMA/BNC connectors
 - Range: 10 to 12400 MHz
 - Max input level: +20 dBm
 - Negative polarity
- 2 reflector planes:
 - 1 with 180 X 180 mm
 - 1 with 300 X 300 mm
- 1 Polarization plane:
 - with 180 X 180 mm
- 4 supports and connection cables
- Microphone
- Transmitter unit including:
 - Regulated power supply protected from short-circuit
 - Audio generator
 - Colour Video bar generator

- Audio/video input
- Audio modulator
- Audio/video combiner
- IF converter
- Up-Link unit including:
 - IF Ku-band converter (14GHz) with output amplifier
 - WG horn antenna, 10 dB
- Satellite Transponder unit including:
 - receiver parabolic antenna with waveguide - coaxial adapter
 - Ku-band converter (14GHz-to-10,75GHz)
 - transmitter parabolic antenna with waveguide-coaxial adapter
- Down-Link unit including:
 - IF Ku-band converter (10.75GHz)
 - WG horn antenna, 10 dB
- Receiver unit including:
 - Regulated power supply protected from short-circuit
 - IF demodulator
 - Audio demodulator
 - Audio/Video output
 - Loudspeaker with audio amplifier and volume control
 - LCD colour Video Monitor

Power supply: 230 Vac 50 Hz single-phase - 90 VA
(Other voltage and frequency under request)

Total weight: 30 Kg

SUPPLIED WITH

**THEORETICAL-EXPERIMENTAL MANUAL
PRACTICAL EXERCISES: MEASUREMENT AND
PARAMETERS VARIATION**

