



LB01 - Basic Link Budget Theory Course

Aimed at those with a basic knowledge of satellite communications to intermediate level, this two day course will equip participants with knowledge to undertake basic uplink, downlink and overall link budgets for satellite communications, based on the use of the SatMaster+ and Pro suite of software from Arrowe Technical Services.

Pre-requisites: Students will be expected to have/bring the following:

Basic knowledge of satellite communications

Laptop computer with SatMaster Pro (latest version) installed

Number of students: 10 maximum

Duration: 2 days

Venue: Luton, Beds UK; or customer premises

Course Syllabus

Satellite System Configuration

Link Budgets – overview

Uplink & Downlink components

Transponders – organization and usage

SCPC (Single Channel Per Carrier) and TDMA (Time Division Multiplex Access)

Link Budget Principles

Targets and Objectives

Significance of Availability Percentage

Inter-relationship of FEC (Forward Error Correction) and BER (Bit Error Rate Ratio)

Modulation schemes – QPSK & 8-PSK

Beam Advantage

Uplink power and path losses

Antenna gain & uplink EIRP calculation

Satellite parameters – receive sensitivity, transponder settings, and downlink power

Interference

LNB (Low Noise Block downconverter) and noise figure

Calculation of G/T (figure of merit) of antenna system

Hardware losses – uplink and downlink

HPA requirements

Input and Output Back-Off

Sample link budgets

Use of SatMaster software

Inputting of parameters

Variation of parameters

Results and understanding the limitations

Example exercises

Bookings: please email training@beaconseek.com to enquire further.