

Satellite Link Budget Training Using SatMaster

Boston, Massachusetts (USA)

17 - 21 November 2025

UK Training

PARTNER



Satellite Link Budget Training Using SatMaster

Code: GC28 **From:** 17 - 21 November 2025 **City:** Boston, Massachusetts (USA) **Fees:** 6400 **Pound**

Introduction

Understanding and designing satellite communication systems is essential for modern communication networks. Satellite link budget training is a cornerstone of this understanding, enabling professionals to analyze and optimize satellite communication systems effectively. This course covers link budget analysis in satellite communication, focusing on practical applications using SatMaster, a leading tool in the field.

Participants will explore concepts such as what is link budget analysis, satellite communications network design, and the types of satellite communication systems. This program combines theory with hands-on workshops to ensure participants gain a comprehensive understanding of satellite engineering, link budget calculation, and interference management strategies.

Whether you're a satellite communications engineer or interested in learning the advantages of communication systems using satellites, this course offers in-depth insights and practical skills to excel in the field.

Course Objectives

By completing this course, participants will:

- Master the principles of link budget analysis and its application in satellite communication systems.
- Use SatMaster to design and optimize satellite links for various services, including VSATs, digital television, and mobile terminals.
- Understand the fundamentals of satellite communication systems, their types, and the significance of different frequency bands.
- Analyze the impact of interference and apply strategies to mitigate it effectively.
- Build proficiency in satellite communications network design and analysis, including transponder loading and optimization techniques.

Course Outlines

Day 1: Principles of Satellite Links and SatMaster Introduction

- Session 1: Fundamentals of Satellite Link Budgets
 - Introduction to satellite link budget concepts: Purpose, structure, and components.
 - Overview of frequency bands: UHF, L, S, C, X, Ku, and Ka bands.
- Session 2: Satellite Footprints and Propagation Effects



- Understanding satellite parameters: EIRP, G/T, and SFD.
- Propagation challenges: Atmospheric effects, troposphere, and ionosphere.
- Session 3: Introduction to SatMaster
 - Hands-on exploration of SatMaster's features, interface, and applications in satellite communications network design and analysis.

Day 2: Advanced Principles and Practical Applications

- Session 1: Rain Models and Modulation Techniques
 - Application of DAH and Crane rain models in link budget calculation in satellite communication.
 - Modulation techniques: QPSK, 8PSK, 16 QAM, and advanced error correction methods.
- Session 2: Link Budget Fundamentals
 - Crafting a one-way digital link budget using DVB-S2 standards and SatMaster tools.

Day 3: Detailed Link Design - Computer Workshop Part 1

- Session 1: Earth Station Design and Antenna Characteristics
 - Overview of basic satellite communication systems and earth station components.
 - Key antenna parameters: Beamwidth, polarization, and efficiency.
- Session 2: Uplink Design and Transponder Loading
 - Workshop on satellite link budget analysis, including SCPC design with SatMaster.

Day 4: Detailed Link Design - Computer Workshop Part 2

- Session 1: Optimization Techniques for Link Budgets
 - Strategies for maximizing bandwidth and minimizing costs.
 - Techniques for ensuring high availability and throughput in satellite communication systems.
- Session 2: Interference and Mitigation Strategies
 - Identifying and addressing interference sources in satellite communication networks.
 - Utilizing spread spectrum and power flux density controls.

Day 5: Interference Considerations and Case Studies

- Session 1: C/I Estimation and VSAT Operations



- Advanced satellite communications network design and analysis for VSAT systems.
- Session 2: Case Studies and Final Workshop
 - Designing a digital VSAT link budget using SatMaster.
 - Reviewing real-world case studies and discussing best practices.

Why Attend this Course: Wins & Losses!

- Hands-on experience with SatMaster for professional satellite link budget training.
- Expertise in designing and analyzing basic satellite communication systems and advanced networks.
- Knowledge of satellite engineering principles and practical applications.
- Insight into the latest technologies and methods for interference mitigation.
- Competitive edge in the job market with skills in link budget analysis and satellite communications network design.

Conclusion

This satellite engineering course offers an unparalleled opportunity to delve into the intricacies of satellite link budget analysis. By mastering tools like SatMaster and gaining a deep understanding of what is link budget analysis, participants will be equipped to excel in the fast-evolving field of satellite communications.

Join this course to unlock the potential of satellite communication training, enhance your expertise, and lead with confidence in designing and managing advanced satellite communication systems. Whether you're a professional seeking to elevate your career or a student aspiring to break into the industry, this course is your gateway to success!



Blackbird Training Cities

Europe



Malaga (Spain)



Sarajevo (Bosnia and Herzegovina)



Oporto (Portugal)



Glasgow (Scotland)



Edinburgh (UK)



Oslo (Norway)



Annecy (France)



Bordeaux (France)



Copenhagen (Denmark)



Birmingham (UK)



Lyon (France)



Moscow (Russia)



Stockholm (Sweden)



Podgorica (Montenegro)



Batumi (Georgia)



Salzburg (Austria)



Florence (Italy)



London (UK)



Istanbul (Turkey)



Amsterdam



Düsseldorf (Germany)



Paris (France)



Athens (Greece)



Barcelona (Spain)



Munich (Germany)



Geneva (Switzerland)



Prague (Czech)



Vienna (Austria)



Rome (Italy)



Brussels (Belgium)



Madrid (Spain)



Berlin (Germany)



Lisbon (Portugal)



Zurich (Switzerland)



Manchester (UK)



Milan (Italy)



Blackbird Training Cities

USA & Canada



Los Angeles (USA)



Orlando, Florida (USA)



Online



Phoenix, Arizona (USA)



Houston, Texas (USA)



Boston, MA (USA)



Washington (USA)



Miami, Florida (USA)



New York City (USA)



Seattle, Washington (USA)



Washington DC (USA)



In House



Jersey, New Jersey (USA)



Toronto (Canada)

ASIA



Baku (Azerbaijan)
(Thailand)



Maldives (Maldives)



Doha (Qatar)



Manila (Philippines)



Bali (Indonesia)



Bangkok



Beijing (China)



Singapore (Singapore)



Sydney



Tokyo (Japan)



Jeddah (KSA)



Riyadh (KSA)



Melbourne (Australia)
(Kuwait)



Phuket (Thailand)



Shanghai (China)



Dubai (UAE)



Kuala Lumpur (Malaysia)



Kuwait City



Seoul (South Korea)



Pulau Ujong (Singapore)



Irbid (Jordan)



Jakarta (Indonesia)



Amman (Jordan)



Beirut



Blackbird Training Cities

AFRICA



Kigali (Rwanda)



Cape Town (South Africa)



Accra (Ghana)



Lagos (Nigeria)



Marrakesh (Morocco)



Nairobi (Kenya)



Zanzibar (Tanzania)



Tangier (Morocco)



Cairo (Egypt)



Sharm El-Sheikh (Egypt)



Casablanca (Morocco)



Tunis (Tunisia)



Blackbird Training Clients



MANNAI Trading
Company WLL,
Qatar



Alumina Corporation
Guinea



Booking.com
Netherlands



Oxfam GB International
Organization,
Yemen



Capital Markets
Authority,
Kuwait



Waltersmith Petroman Oil Limited
Nigeria



Qatar National Bank
(QNB),
Qatar



Qatar Foundation,
Qatar



AFRICAN UNION ADVISORY
BOARD ON CORRUPTION,
Tanzania



KFAS
Kuwait



Reserve Bank of
Malawi,
Malawi



Central Bank of Nigeria
Nigeria



Ministry of Interior
Kingdom of Saudi Arabia
KSA



Mabruk Oil Company
Libya



Saudi Electricity
Company,
KSA



BADAN PENGELOLA
KEUANGAN Haji,
Indonesia



NATO
Italy



ENI CORPORATE
UNIVERSITY,
Italy



Gulf Bank
Kuwait



General Organization for
Social Insurance
KSA



Defence Space Administration
Nigeria



National Industries
Group (Holding),
Kuwait



Hamad Medical
Corporation,
Qatar



USAID
Pakistan



STC Solutions,
KSA



North Oil company,



EKO Electricity



Oman Broadband



UNITED NATIONS
UN.



Authority for

UK Training
PARTNER



Blackbird Training Categories

Management & Admin

Entertainment & Leisure
Professional Skills
Finance, Accounting, Budgeting
Media & Public Relations
Project Management
Human Resources
Audit & Quality Assurance
Marketing, Sales, Customer Service
Secretary & Admin
Supply Chain & Logistics
Management & Leadership
Agile and Elevation

Technical Courses

Artificial Intelligence (AI)
Hospital Management
Public Sector
Special Workshops
Oil & Gas Engineering
Telecom Engineering
IT & IT Engineering
Health & Safety
Law and Contract Management
Customs & Safety
Aviation
C-Suite Training



International House 185 Tower Bridge
Road London SE1 2UF United Kingdom



+44 7401 1773 35
+44 7480 775526



Sales@blackbird-training.com



www.blackbird-training.com

