

## Satellite Link Budget Training Using SatMaster

*Düsseldorf (Germany)*

*17 - 21 August 2026*

UK Training

# PARTNER



## Satellite Link Budget Training Using SatMaster

Code: GC28 From: 17 - 21 August 2026 City: Düsseldorf (Germany) Fees: 4900 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**

Booking.com  
Netherlands



**OXFAM**

Oxfam GB International  
Organization,  
Yemen



Capital Markets  
Authority  
Kuwait

Capital Markets  
Authority,  
Kuwait



Waltersmith Petroman Oil Limited  
Nigeria



Qatar National Bank  
(QNB),  
Qatar



مؤسسة قطر  
Qatar Foundation

Qatar Foundation,  
Qatar



AFRICAN UNION ADVISORY  
BOARD ON CORRUPTION,  
Tanzania



مؤسسة الكويت للتقدم العلمي  
Kuwait Foundation for the Advancement of Sciences

KFAS  
Kuwait



Reserve Bank of  
Malawi,  
Malawi



Central Bank of Nigeria  
Nigeria



Ministry of Interior  
Kingdom of Saudi Arabia

Ministry of Interior,  
KSA



Mabruk Oil Company  
Libya



الشركة السعودية للكهرباء  
Saudi Electricity Company  
KSA



BADAN PENGELOLA  
KEUANGAN Haji,  
Indonesia



NATO  
Italy



ENI CORPORATE  
UNIVERSITY,  
Italy



Gulf Bank  
Kuwait



المؤسسة العامة للتأمينات الاجتماعية  
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.



هيئة تنظيم الكهرباء - عمان  
Authority for  
Electricity Regulation, Oman

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](mailto:Sales@blackbird-training.com)

 [www.blackbird-training.com](http://www.blackbird-training.com)

