



Customer Education Services

January 2020

TRAINING CATALOGUE





TABLE OF CONTENT:

Gilat Customer Education Services Overview	4
1. SkyEdge II Full Hub Operations Course	5
2. SkyEdge II Basic Hub Operations Course	6
3. SkyEdge II Basic Hub Operations ELearning Course	7
4. SkyEdge II Customized Webinar	8
5. SkyEdge II Basic Hub Operations Certification Exam	9
6. SkyEdge II Advanced Hub Operations and Troubleshooting Course	10
7. SkyEdge II Advanced Customized Course	11
8. SkyEdge II VSAT and Antenna Installers Course	14
9. SkyEdge II VSAT Installers Train-the-trainer (TTT) Course	15
10. SkyEdge II Sizing Training Course	16
11. SkyEdge II-c Basic cHub Operations Course	17
12. SkyEdge II-c X-Architecture Basic Hub Operations Course	18
13. SkyEdge II-c VNO Operations Course	19
14. SkyEdge II-c Advanced C-Hub Operations and Troubleshooting Course	20
15. SkyEdge II-c Advanced X-Architecture Operations and Troubleshooting Course	21
16. SkyEdge II-c Advanced Customized Course	22
17. SkyEdge II-c VSAT and Antenna Installers Course	25
18. SkyEdge II-c VSAT Installers Train-the-trainer (TTT) Course	26
19. SkyEdge II-c Sizing Training Course	27
20. SkyEdge II-c Customized Webinar	28
21. RaySat (RAS) One-Way Antenna Installation and Operations Course	29
22. RaySat (RAS) Two-Way Antenna Installation and Operations Course	30
23. GLT/MLT Installation and Operations Course	31
24. MCPC Hub Operations Course	32
25. Antenna & RFT Equipment Operations Basic Course	33
26. Antenna & RFT Equipment Operations Advanced Course	34





GILAT CUSTOMER EDUCATION SERVICES OVERVIEW

Gilat Customer Educational Services (CES) department enables you to make the most of your Gilat products, offering focused, cost-effective training programs to help you successfully design, configure, operate, and manage your network. Gilat structured learning approach has been developed to meet the needs of different audience types.

Gilat courses include a blend of presentations, discussions, and hands-on exercises, designed to enable students to acquire new skills and knowledge in an instructor-facilitated environment, featuring the most updated software and hardware. Courses are updated continually, keeping pace with new product designs and technology.

Our highly skilled engineers, all of whom are professional educators with a rich background in training techniques and methodology, run Gilat CES department. Standard Gilat courses include:

- **VSAT Installation & Antenna Pointing**, which provides hands-on experience in installing and maintaining remote VSATs and antennas.
- **Hub Operations**, which guides Tier-1 and Tier-2 support personnel through system theory, architecture, dataflow, installation, operation and basic troubleshooting and maintenance procedures.
- **Advanced Hub Operations and Troubleshooting**, which enhances the skill set of Tier-2 and Tier-3 support personnel, who perform high-level network diagnostics and troubleshooting. The course provides the participants with deeper understanding of Gilat products and analysis tools and sharpens the troubleshooting technics of the students.
- **Sizing**, which guides personnel in how to perform the necessary calculations for system sizing, from simple to more complex sizing scenarios, using practical cases.
- **E-learning Academy**, which includes a selection of courses developed for use online, available on [Gilat' e-Learning Academy](#) web site.

In addition to standard courses, Gilat can customize course study according to customers' specific operations and personnel requirements.

Please review the Gilat courses in this document. If you have any questions, please contact Gilat Customer Educational Services: ces@gilat.com.



1. SKYEDGE II HUB OPERATIONS COURSE

Course Name: SkyEdge II Hub Operations

Course Code: PSTRSEII01, PSTRSEII02

Prerequisites: NET 101, or previous networking experience

Duration: Eight (8) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The SkyEdge II Hub Operations course is aimed at new Tier-1 and Tier-2 Hub operators, who will be operating and maintaining SkyEdge II Hub and Remote VSATs. This course introduces theoretical, operational, and practical aspects of the SkyEdge II system. It includes hands-on workshops and exercises, enabling participants to practice basic configuration of the Gilat system/equipment and to perform basic troubleshooting.

The participants must pass the Final Exam to achieve course certification.

Note: Participants should enroll in a scheduled course just prior to Hub installation.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe system components and associated functions
- Describe system Data Flow
- Identify Hub components
- Install, configure and troubleshoot a VSAT
- Describe NMS architecture and the functions of each topology and icon
- Add/delete/modify/manage VSAT regions and VSATs
- Create/copy/modify component configuration templates
- Analyze NMS alarms and events
- Backup and restore NMS database parameters
- Perform OB switchover
- Perform NMS switchover
- Perform daily and periodic Hub maintenance procedures
- Perform basic traffic analysis via SkyMon
- Describe and perform basic configurations¹ of:
 - QoS
 - IP Features (DHCP, NAT, Routing, MCAST)
 - Multiple VLANs
 - VoIP
 - Cellular Backhauling

¹ According to features implemented at customer's network.



2. SKYEDGE II BASIC HUB OPERATIONS COURSE

Course Name: SkyEdge II Basic Hub Operations

Course Code: PSTRSEII03, PSTRSEII04

Prerequisites: NET 101, or previous networking experience

Duration: Five (5) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The SkyEdge II Basic Hub Operations course is aimed at Tier-1 and Tier-2 Hub operators who already or will be operating and maintaining SkyEdge II Hub and Remote VSATs. This course introduces the theoretical, operational, and practical aspects of the SkyEdge II system. It includes hands-on workshops and exercises, enabling participants to practice basic configuration of Gilat system/equipment and to perform basic troubleshooting.

The participants must pass the Final Exam to achieve course certification.

Note: Participants should enroll in a scheduled course just prior to Hub installation.

Course Objectives:

Upon completing the course, participants will be able to successfully:

- Describe system components and associated functions
- Describe system Data Flow
- Identify Hub components
- Install, configure and troubleshoot a VSAT
- Describe NMS architecture and functions of each topology & icon
- Add/delete/modify/manage VSAT regions and VSATs
- Create/copy/modify component configuration templates
- Analyze NMS alarms and events
- Backup and restore NMS database parameters
- Perform OB switchover
- Perform NMS switchover
- Perform daily and periodic Hub maintenance procedures
- Perform basic traffic analysis via SkyMon
- Describe and perform basic configurations² of:
 - QoS
 - IP Features (DHCP, NAT, Routing, MCAST)
 - Multiple VLANs
 - VoIP
 - Cellular Backhauling

² According to features implemented at customer's network.



3. SKYEDGE II BASIC HUB OPERATIONS E-LEARNING COURSE

Course Name: SkyEdge II Basic Hub Operations – e-Learning Course

Course Code: PSTReseII01

Prerequisites: NET 101, or previous networking experience

Duration: Self-paced. Final exam is offered for up to two months after enrollment

Enrollment: No limitation

Location: [Gilat e-Learning Academy web site](#)

Course Overview:

This online course, available on the [Gilat e-Learning Academy web site](#), enables you to learn all the SkyEdge II fundamentals at your own leisure and at your own pace. The course includes one online meeting for questions and answers.

The participants must pass the Final Exam to achieve course certification.

Note: Participants should enroll in this course prior to Hub installation.

Course Objectives:

Upon completing the course, participants will be able to successfully:

- Describe system components and associated functions
- Describe system Data Flow
- Identify Hub components
- Install, configure and troubleshoot a VSAT
- Describe NMS architecture and functions of each topology and icon
- Add/delete/modify/manage VSAT regions and VSATs
- Create/copy/modify component configuration templates
- Analyze NMS alarms and events
- Backup and restore NMS database parameters
- Perform daily and periodic Hub maintenance procedures
- Describe the system QoS mechanisms



4. SKYEDGE II CUSTOMIZED WEBINAR

Course Name: SkyEdge II Customized Webinar

Course Code: PSTRwSEII01

Location: Online

Course Overview:

You can request Gilat Customer Education Services to develop customized SkyEdge II webinar to meet your requirements.

To help define, develop and deliver webinars, please contact any of the following:

- Your local AM/PM
- Our general Gilat Customer Educational Services contact, ces@gilat.com
- Gilat Customer Training Manager, [Emil Kogan](#)



5. SKYEDGE II BASIC HUB OPERATIONS CERTIFICATION EXAM

Name: SkyEdge II Basic Hub Operations Certification Exam

Code: PSTRxSEII01

Overview:

The SkyEdge II Hub Operations Certification Exam is aimed at Tier 1 and Tier 2 Hub operators who want to achieve Gilat SkyEdge II Hub Operations Certification.

This certification exam is a prerequisite for the following advanced courses:

- Gilat SkyEdge II Advanced Hub Operations and Troubleshooting Course
- Gilat SkyEdge II Sizing Course

The Gilat Hub Operations Certification Exam covers the following subjects

- Administration
- SkyEdge II basic terminology
- Dataflow and Hub components
- Inbound overview
- Outbound overview
- NMS
- VSATs
- Inbound QoS
- Outbound QoS

For a detailed list of exam topics, please refer to the [Gilat Academy web site](#).



6. SKYEDGE II ADVANCED HUB OPERATIONS AND TROUBLESHOOTING COURSE

Course Name: SkyEdge II Advanced Hub Operations and Troubleshooting Course

Course Code: PSTRSEII06, PSTRSEII07

Prerequisites: Participants must first complete the SkyEdge II Hub Operations course **or** successfully pass the Gilat SkyEdge II Hub Operations Certification Exam

Duration: Five (5) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The SkyEdge II Advanced Hub Operations and Troubleshooting course is aimed at field service engineers and experienced Hub operators who will be providing Tier-2 and Tier-3 system support and will be operating and maintaining the SkyEdge II Hub and Remote VSATs. This course introduces the detailed theoretical, operational, and practical aspects of the SkyEdge II system. Participants will gain thorough knowledge of the system and will gain experience in the system troubleshooting.

Course participants will receive background information about Gilat system troubleshooting methodology and will learn how to use common analysis and technical engineering tools. They will also learn how to identify performance degradation and how to evaluate and repair system failures. The course includes hands-on workshops and exercises, enabling participants to practice configuration of Gilat system/equipment and to perform system troubleshooting and monitoring.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe system architecture, features, system components and associated functions
- Identify and connect Hub components
- Explain attributes of the DVB-RCS Inbound access schemes
- Describe DVB-S2 essential attributes
- Quickly respond to any failure in the Gilat SkyEdge II system
- Describe and implement the troubleshooting methodology
- Analyze and troubleshoot the system using the NMS telemetries
- Monitor the LAN traffic using a sniffer
- Analyze NMS alarms and events
- Analyze SkyMon Reports
- Troubleshoot the system using advanced CLI Commands
- Effectively communicate with Gilat Technical Support



7. SKYEDGE II ADVANCED CUSTOMIZED COURSE

Course Name: SkyEdge II Advanced Customized Course

Course Code: PSTRSEII18, PSTRSEII19

Prerequisites:

- Participants must have completed the Hub Operations Course or successfully pass the Gilat SkyEdge II Hub Operations Certification Exam
- At least six months' working experience with SkyEdge II system
- Strong background in basic networking, RF, and satellite communications fundamentals is an advantage

Duration: Customized

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

This course is aimed at field service engineers and Hub operators who will be providing Tier-2 and Tier-3 system support and who wish to be trained on the specific topics related to SkyEdge II system. Course participants will receive extensive background information on SkyEdge II supported technologies.

The course includes daily, hands-on workshops, enabling participants to practice system/equipment configurations.

This course is customized, enabling participants to select topics of interest from the training modules presented below, and to determine the length of the course.

Training Modules:

The table below lists the available modules and their duration:

Training Module	Description	Duration (Days)	Notes
Hub Architecture Refresher	Refresh and extend your knowledge of the system introduction, architecture and working modes as a basis for the rest of the course.	1	Mandatory
System Analysis & Monitoring	Perform system analysis and monitoring using system monitoring tools such as telemetries and Skymon	1	
System Monitoring using Sniffer	Become familiar with Network Sniffing tool (Wireshark) and perform system monitoring using this tool	1/2	
DPS and HSP Console Commands	Learn the relevant HSP and DPS parameters. View selected console commands and analyze the HSP status using these commands.	1	The hands-on is performed on non-commercial hub only
IB QoS	Become familiar with the DiffServ standard and Gilat's implementation of the DiffServ and MPN. Configure IB QoS scenarios in the NMS.	1	
OB QoS	Become familiar with Allot hardware and software platform and its architecture. Configure Allot QoS policy and perform traffic monitoring.	1	The hands-on is performed on non-commercial hub only
Backhauling Introduction	Understand Gilat's Backhauling implementation. Practice the configuration of this feature.	1/2	
IP Features	Learn about the implementation of enhanced IP features, such as DHCP, NAT, RIP, Static Routing, Multicast, in SkyEdge II system. Practice the configuration of these features.	1	The hands-on is performed on non-commercial hub only



Multiple VLANs	Learn about the implementation of the multiple VLANs in SkyEdge II system. Practice the configuration of this feature.	1/2	The hands-on is performed on non-commercial hub only
VoIP	Understand VoIP technology and Gilat's implementation of this feature. Configure Gilat's VoIP solution.	1	The hands-on is a subject to the availability of the VoIP equipment.
Introduction to Mesh	Introduction to Gilat's mesh solution. Configure mesh VSATs.	1/2	
RF Measurements	Become familiar with SkyEdge II RF measurements procedure and perform the RF measurement according to it.	1	The hands-on is a subject to the availability of the RF measuring equipment.
System Troubleshooting Methodology	Become familiar with Gilat Troubleshooting methodology and practice SkyEdge II system troubleshooting using this technic.	1 1/2	The hands-on is performed on non-commercial hub only



8. SKYEDGE II VSAT AND ANTENNA INSTALLERS COURSE

Course Name: SkyEdge II VSAT and Antenna Installers

Course Code: PSTRSEI14

Prerequisites/Required Skills:

Previous work experience in VHF/UHF Land-Mobile, cellular, TVRO, terrestrial microwave antenna installations or other RF-related fields, is advantageous, but not mandatory.

Duration: Two (2) days

Enrollment: Ten (10), maximum

Location: Customer site

Course Overview:

This course is aimed at technicians who will be installing and/or maintaining Gilat's remote VSATs.

Note: If VSAT installation is handled by subcontractors, it is highly recommended that they participate in this course as well.

Participants will practice installing a remote site antenna using Gilat's easy-to-install SkyMagic, a waterproof, handheld antenna-pointing device, designed to assist the VSAT antenna installer in pointing the antenna to the desired satellite.

Course Objectives:

Upon completing this course, participants will be able to:

- Explain VSAT network architecture and basic VSAT operation theory
- Gain a fundamental understanding of basic satellite communications as well as of relevant satellite and RF terminology/acronyms
- Describe satellite-based network advantages and disadvantages, compared to alternative broadband technologies
- Illustrate basic Inbound and Outbound dataflow
- List and describe outdoor unit (ODU) subcomponents
- Explain indoor unit (IDU) features, relevant LEDs and displayed LCD parameters
- Demonstrate VSAT configuration procedures
- List and describe all the steps involved in the commissioning process
- Determine the best suitable antenna mount for various installations
- Assemble all ODU/Feed Assembly components
- Assemble, install and point antenna for optimum performance, using SkyMagic
- Prepare inter-facility link (IFL) cables and connectors using a crimp/cutter tool for RG-6 and RG-11 coax
- Weatherproof RF connectors using MOCAP™ or COAXSEAL™
- Calculate the look angle for a given location
- Point the VSAT antenna using a DVB-capable spectrum analyzer or field strength meter
- Configure a PC with the required network parameters
- Test and troubleshoot VSAT/network integrity using basic networking commands to verify that the installation was successful



9. SKYEDGE II VSAT INSTALLERS TRAIN-THE-TRAINER (TTT) COURSE

Course Name: SkyEdge II VSAT Installers Train-the-trainer (TTT)

Course Code: PSTRSEII15

Prerequisites/Required Skills:

Previous work experience in VHF/UHF Land-Mobile, cellular, TVRO, terrestrial microwave antenna installations or other RF-related fields, is advantageous, but not required.

Duration: Two (3) days

Enrollment: Ten (10), maximum

Location: Customer site

Course Overview:

This course is aimed at professional VSAT installers who will train new VSAT installers and eventually become VSAT installation instructors. Upon completion of the course, the instructor will acquire all the necessary knowledge, documentation and tools to successfully train, test and evaluate a participant in a VSAT installer's course.

The following main subjects will be covered in the VSAT Installers Train-the-trainer course:

- VSAT IDU installation and configuration
- Antenna pointing
- Troubleshooting various hardware and software-related problems associated with customer equipment

Course Objectives:

Upon completing this course, participants will be able to:

- Understand the basics of satellite communications
- Use relevant satellite and RF terminology and acronyms
- Describe satellite-based network advantages and disadvantages, compared to alternative broadband technologies
- Describe basic network components
- Illustrate basic Inbound and Outbound dataflow
- List and describe ODU subcomponents
- Explain features, relevant LEDs and IDU LCD parameters
- Demonstrate the VSAT configuration procedure
- List and describe the steps involved in the commissioning process
- Test and troubleshoot VSAT/network operation using basic networking commands



10. SKYEDGE II SIZING TRAINING COURSE

Course Name: SkyEdge II Sizing Training Course

Course Code: PSTRSEII09, PSTRSEII10

Prerequisites:

- Participants must first complete the SkyEdge II Hub Operations course or successfully pass the Gilat SkyEdge II Hub Operations Certification Exam
- At least one year's experience working with VSAT systems
- Basic knowledge of Microsoft Excel
- Some background in math and algebra

Duration: Three (3) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site

Course Overview:

This course teaches how to perform the necessary calculations for system sizing. Training progresses from simple to more complex sizing scenarios, using practical cases.

This training also provides the tools to understand different aspects of the Gilat SkyEdge II system and its current capabilities. Participants gain the skills to handle sizing tools and related items, such as frequency planning. In addition, the course explains the need to reformulate link budgeting, to ensure optimization.

Course Objectives:

Upon completing this course, participants will be able to:

- Calculate Forward bandwidth and all other characteristics, given specific requirements
- Make knowledgeable decisions about the entire Return mechanism, bandwidth, frequencies and schemes
- Describe the Link Budget considerations and its relation to Sizing
- Evaluate system for scenarios involving single/multiple applications
- Evaluate the benefit of adopting system enhancements
- Understand consequences of modifying system parameters
- Gain proficiency with sizing tools and spreadsheets



11. SKYEDGE II-C BASIC HUB OPERATIONS COURSE

Course Name: SkyEdge II-c Hub Operations

Course Code: PSTRSEIIc01, PSTRSEIIc02

Prerequisites: NET 101 or previous networking experience

Duration: Five (5) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand (C-Hub only)
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The Gilat SkyEdge II-c Hub Operations course is aimed at Tier-1 and Tier-2 Hub operators who will be operating and maintaining the SkyEdge II-c Hub and remote VSATs. This course introduces the theoretical, operational, and practical aspects of the SkyEdge II-c system. It includes hands-on workshops and exercises, enabling participants to practice basic configuration of the Gilat system/equipment and to perform basic troubleshooting.

Note: Participants should enroll in a scheduled course just prior to Hub installation.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe system components and associated functions
- Describe system Data Flow
- Identify Hub components
- Install, configure and troubleshoot a VSAT
- Describe NMS architecture and the functions
- Add/delete/modify/manage VSAT Groups and VSATs
- Create/copy/modify component configurations
- Analyze NMS alarms and events
- Backup and restore NMS database parameters
- Perform daily and periodic Hub maintenance procedures
- Describe and perform basic configurations of common features³:
 - QoS
 - IP Features (DHCP, NAT, Routing, MCAST, etc.)
 - Multiple VLANs
 - VoIP
 - Cellular Backhauling
 - Layer 2

³ According to features implemented at customer's network.



12. SKYEDGE II-C X-ARCHITECTURE BASIC HUB OPERATIONS

Course Name: SkyEdge II-c X-Architecture Hub Operations

Course Code: PSTRSEIIcX01, PSTRSEIIcX02

Prerequisites: NET 101 or previous networking experience

Duration: Five (5) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The Gilat SkyEdge II-c X-Architecture Hub Operations course is aimed at Tier-1 and Tier-2 Hub operators who will be operating and maintaining the SkyEdge II-c X-Architecture Hub and remote VSATs. This course introduces the theoretical, operational, and practical aspects of the SkyEdge II-c X-Architecture system. It includes hands-on workshops and exercises, enabling participants to practice basic configuration of the Gilat system/equipment and to perform basic troubleshooting.

Note: Participants should enroll in a scheduled course just prior to Hub installation.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe system components and associated functions
- Describe system Data Flow
- Identify Hub components
- Install, configure and troubleshoot a VSAT
- Describe TotalNMS architecture and the functions
- Add/delete/modify/manage VSAT Groups and VSATs
- Create/copy/modify component configurations
- Analyze TotalNMS alarms and events
- Backup and restore TotalNMS database parameters
- Perform daily and periodic Hub maintenance procedures
- Describe and perform basic configurations of common features⁴:
 - NMS Basic Usage
 - MG & VSAT creation
 - SLA Profiles
 - Classification Profiles
 - Users management
 - Monitoring

⁴ According to features implemented at customer's network.



13. SKYEDGE II-C VNO OPERATIONS COURSE

Course Name: SkyEdge II-c VNO Operations

Course Code: PSTRSEIIc16, PSTRSEIIc17

Prerequisites: NET 101 or previous networking experience

Duration: Three (3) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand (C-Hub only)
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The Gilat SkyEdge II-c VNO Operations course is aimed at Tier-1 and Tier-2 ISP or VNO operators who will be operating the SkyEdge II-c network and remote VSATs. This course introduces the theoretical, operational, and practical aspects of the SkyEdge II-c system. It includes hands-on workshops and exercises, enabling participants to practice basic configuration of the Gilat system and to perform basic VSAT troubleshooting.

Note: Participants should enroll in a scheduled course just prior to Hub installation.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe the system operational concept
- Describe system Data Flow
- Install, configure and troubleshoot a VSAT
- Describe NMS architecture and the functions
- Add/delete/modify/manage VSAT Groups and VSATs
- Analyze NMS alarms and events
- Use the NMS reports and telemetries to monitor the network
- Describe and perform basic configurations of common features⁵:
 - QoS
 - NMS Basic Usage
 - MG & VSAT creation
 - SLA Profiles
 - Classification Profiles
 - Monitoring

⁵ According to features implemented at customer's network.



14. SKYEDGE II-C ADVANCED C-HUB OPERATIONS AND TROUBLESHOOTING COURSE

Course Name: SkyEdge II-c Advanced Hub Operations and Troubleshooting Course

Course Code: PSTRSEIIc04, PSTRSEIIc05

Prerequisites: Participants must first complete the SkyEdge II-c Hub Operations course **or** successfully pass the Gilat SkyEdge II-c Hub Operations Certification Exam

Duration: Five (5) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The SkyEdge II-c Advanced C-Hub Operations and Troubleshooting course is aimed at field service engineers and experienced C-Hub operators who provide Tier-2 and Tier-3 system support and operate and maintain the SkyEdge II-c C-Hub and Remote VSATs. This course introduces the detailed theoretical, operational, and practical aspects of the SkyEdge II-c system. Participants will gain thorough knowledge of the system architecture and will gain experience in the system troubleshooting.

Course participants will receive background information about Gilat system troubleshooting methodology and will learn how to use common analysis and technical engineering tools. They will also learn how to identify performance degradation and how to evaluate and repair system failures. The course includes hands-on workshops and exercises, enabling participants to practice configuration of Gilat system/equipment and to perform system troubleshooting and monitoring.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe system architecture, features, system components and associated functions
- Identify C-Hub components
- Explain attributes of the DVB-RCS Inbound access schemes
- Describe DVB-S2 essential attributes
- Describe SkyEdge II-c C-Hub System Architecture
- Analyze the network performance using TotalNMS monitoring tools
- Analyze NMS alarms and events
- Monitor the LAN traffic using a sniffer
- Perform management and maintenance procedures of NMS and NSC
- Describe and implement the troubleshooting methodology
- Effectively communicate with Gilat Technical Support



15. SKYEDGE II-C ADVANCED X-ARCHITECTURE OPERATIONS AND TROUBLESHOOTING COURSE

Course Name: SkyEdge II-c Advanced Hub Operations and Troubleshooting Course

Course Code: PSTRSEIIc04, PSTRSEIIc05

Prerequisites: Participants must first complete the SkyEdge II-c Hub Operations course **or** successfully pass the Gilat SkyEdge II-c Hub Operations Certification Exam

Duration: Five (5) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

The SkyEdge II-c Advanced X-Hub Operations and Troubleshooting course is aimed at field service engineers and experienced X-Hub operators who provide Tier-2 and Tier-3 system support and operate and maintain the SkyEdge II-c X-Hub and Remote VSATs. This course introduces the detailed theoretical, operational, and practical aspects of the SkyEdge II-c system. Participants will gain thorough knowledge of the system architecture and will gain experience in the system troubleshooting.

Course participants will receive background information about Gilat system troubleshooting methodology and will learn how to use common analysis and technical engineering tools. They will also learn how to identify performance degradation and how to evaluate and repair system failures. The course includes hands-on workshops and exercises, enabling participants to practice configuration of Gilat system/equipment and to perform system troubleshooting and monitoring.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe system architecture, features, system components and associated functions
- Identify X-Hub components
- Explain attributes of the DVB-RCS Inbound access schemes
- Describe DVB-S2 essential attributes
- Describe SkyEdge II-c X-Hub System Architecture
- Analyze the network performance using TotalNMS monitoring tools
- Analyze NMS alarms and events
- Monitor the LAN traffic using a sniffer
- Perform management and maintenance procedures of NMS and NSC
- Describe and implement the troubleshooting methodology
- Effectively communicate with Gilat Technical Support



16. SKYEDGE II-C ADVANCED CUSTOMIZED COURSE

Course Name: SkyEdge II-c Customized Course – Available both for cHub and xHub

Course Code: PSTRSEIIC14, PSTRSEIIC15

Prerequisites:

- Participants must have completed the Hub Operations Course
- At least six months' working experience with SkyEdge II-c system
- Strong background in basic networking, RF, and satellite communications fundamentals is an advantage

Duration: Customized

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Petach Tikva, Israel
- Customer site (non-commercial hub only)

Course Overview:

This course is aimed at field service engineers and Hub operators who will be providing Tier-2 and Tier-3 system support and who wish to be trained on the specific topics related to SkyEdge II-c system. Course participants will receive extensive background information on SkyEdge II-c supported technologies.

The course includes daily, hands-on workshops, enabling participants to practice system/equipment configurations.

This course is customized, enabling participants to select topics of interest from the training modules presented below, and to determine the length of the course.

Training Modules

The table below lists the available modules and their duration⁶:

⁶ Modules that don't appear in the table may be added as well according to customer request.

Training Module	Description	Duration (Days)	Notes
Hub Architecture Refresher	Refresh and extend your knowledge of the system introduction, architecture and working modes as a basis for the rest of the course.	1	Mandatory
System Analysis & Monitoring	Perform system analysis and monitoring using system monitoring tools such as TotalNMS reports and telemetries.	1	
TotalControl	Extend your knowledge in various Bandwidth Management mechanisms and QoS.	1	The hands-on is performed on non-commercial hub only
Allot System (If applicable)	Become familiar with Allot hardware and software platform and its architecture. Configure Allot QoS policy and perform traffic monitoring.	1/2	This session is applicable for customer who have the Allot system installed and integrated with SEII-c. The hands-on is performed on non-commercial hub only
VoIP	Understand VoIP technology and Gilat's implementation of this feature. Configure Gilat's VoIP solution.	1	The hands-on is a subject to the availability of the VoIP equipment.
Cellular Backhauling	Understand Gilat's Backhauling implementation. Practice the configuration of this feature.	1	The hands-on is performed on non-commercial hub only
Layer 2	Understand Gilat's implementation of Layer 2 feature. Practice the configuration of this feature.	1	The hands-on is performed on non-commercial hub only
Mobility	Understand the Mobility mechanism and its implementation in the system. Practice the configuration of this feature.	2	The hands-on is performed on non-commercial hub only



Training Module	Description	Duration (Days)	Notes
IP Features	Learn about the implementation of enhanced IP features, such as DHCP, NAT, Dual IPSec, Static and Dynamic Routing, Multicast in SkyEdge II-c system. Practice the configuration of these features.	1 1/2	The hands-on is performed on non-commercial hub only
Multiple VLANs	Learn about the implementation of the multiple VLANs in SkyEdge II-c system. Practice the configuration of this feature.	1/2	The hands-on is performed on non-commercial hub only
NBI Operation	Learn about the operation of TotalNMS NBI for access of OSS/BSS.	1	
NMS and NSC Troubleshooting	Become familiar with NMS and NSC cluster configuration, perform basic monitoring and troubleshooting.	1	The hands-on is performed on non-commercial hub only
RF Measurements	Become familiar with SkyEdge II-c RF measurements procedure and perform the RF measurement according to it.	1	The hands-on is a subject to the availability of the RF measuring equipment.
Cloud QoS	Become familiar with Network QoS enforcement mechanism Vs. MG/NS traditional one. Learn about Custom Areas and new QoS capabilities	1	Hands-On includes configuration practice, but not installation of CQM



17. SKYEDGE II-C VSAT AND ANTENNA INSTALLERS COURSE

Course Name: SkyEdge II-c VSAT and Antenna Installers

Course Code: PSTRSEIIc012

Prerequisites/Required Skills:

Previous work experience in VHF/UHF Land-Mobile, cellular, TVRO, terrestrial microwave antenna installations or other RF-related fields is advantageous but not required.

Duration: Two (2) days

Enrollment: Ten (10), maximum

Location: Customer site

Course Overview:

This course is aimed at technicians who will be installing and/or maintaining remote VSATs.

Note: If VSAT installation is handled by subcontractors, it is highly recommended that they participate in this course as well.

Course Objectives:

Upon completing this course, students will be able to successfully:

- Explain network architecture and basic theory of the VSAT operation
- Have a fundamental understanding of basic satellite communications as well as relevant satellite and RF terminology/acronyms
- Describe satellite-based network advantages and disadvantages, compared to alternative broadband technologies
- Illustrate basic Inbound and Outbound dataflow
- List and describe ODU subcomponents
- Explain IDU features, relevant LEDs and displayed LCD parameters
- Demonstrate VSAT configuration procedures
- List and describe all the steps involved in the commissioning process
- Determine the best suitable antenna mount for various installations
- Assemble all ODU/feed assembly components
- Assemble, install and point antenna for optimum performance,
- Prepare IFL cables and connectors using a crimp/cutter tool for RG-6 and RG-11 coax
- Weatherproof RF connectors using MOCAPTM or COAXSEALTM
- Calculate the look angle for a given location
- Point the VSAT antenna using a DVB-capable spectrum analyzer or field strength meter
- Configure a PC with the required network parameters
- Test and troubleshoot VSAT/network integrity using basic networking commands to verify that the installation was successful



18. SKYEDGE II-C VSAT INSTALLERS TRAIN-THE-TRAINER (TTT) COURSE

Course Name: SkyEdge II-c VSAT Installers Train-the-trainer (TTT)

Course Code: PSTRSEIIc13

Prerequisites/Required Skills:

Previous work experience in VHF/UHF Land-Mobile, cellular, TVRO, terrestrial microwave antenna installations or other RF-related fields, is advantageous, but not required.

Duration: Two (3) days

Enrollment: Ten (10), maximum

Location: Customer site

Course Overview:

This course is aimed at professional VSAT installers who will train new VSAT installers and eventually become VSAT installation instructors. Upon completion of the course, the instructor will acquire all the necessary knowledge, documentation and tools to successfully train, test and evaluate a participant in a VSAT installer's course.

The following main subjects will be covered in the VSAT Installers Train-the-trainer course:

- VSAT IDU installation and configuration
- Antenna pointing
- Troubleshooting various hardware and software-related problems associated with customer equipment

Course Objectives:

Upon completing this course, participants will be able to:

- Understand the basics of satellite communications
- Use relevant satellite and RF terminology and acronyms
- Describe satellite-based network advantages and disadvantages, compared to alternative broadband technologies
- Describe basic network components
- Illustrate basic Inbound and Outbound dataflow
- List and describe ODU subcomponents
- Explain features, relevant LEDs and IDU LCD parameters
- Demonstrate the VSAT configuration procedure
- List and describe the steps involved in the commissioning process
- Test and troubleshoot VSAT/network operation using basic networking commands



19. SKYEDGE II-C SIZING TRAINING COURSE

Course Name: SkyEdge II-c Sizing Training Course

Course Code: PSTRSEIIc07, PSTRSEIIc08

Prerequisites:

- Participants must first complete the SkyEdge II-c Hub Operations course
- At least one year's experience working with VSAT systems
- Basic knowledge of Microsoft Excel
- Some background in math and algebra

Duration: Three (3) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Educational Centers:
 - Bangkok, Thailand
 - Petach Tikva, Israel
- Customer site

Course Overview:

This course teaches how to perform the necessary calculations for system sizing.

The training progresses from simple to more complex sizing scenarios, using practical cases. It also provides the tools to understand different aspects of the SkyEdge II-c system and its current capabilities. Participants gain the skills to handle sizing tools and related items, such as frequency planning. In addition, the course explains the need to reformulate link budgeting to ensure optimization.

Course Objectives:

Upon completing this course, participants will be able to:

- Calculate Forward bandwidth and all other characteristics, given specific requirements
- Make knowledgeable decisions about the entire Return mechanism, bandwidth, frequencies and schemes
- Describe the Link Budget considerations and its relation to Sizing
- Evaluate system for scenarios involving single/multiple applications
- Evaluate the benefit of adopting system enhancements
- Understand consequences of modifying system parameters
- Gain proficiency with sizing tools and spreadsheets



20. SKYEDGE II-C CUSTOMIZED WEBINAR

Course Name: SkyEdge II-c Customized Webinar

Course Code: PSTRwSEIIc01

Location: Online

Course Overview:

You can request that Gilat Customer Education Services to develop customized SkyEdge II-c webinar to meet your requirements.

To help define, develop and deliver webinars, please contact any of the following:

- Your local PM
- Our general Gilat Customer Educational Services contact, ces@gilat.com
- Gilat Customer Training Manager, [Emil Kogan](#)



21. RAYSAT (RAS) ONE-WAY ANTENNA INSTALLATION AND OPERATIONS COURSE

Course Name: RAS 1-way Antenna Installation and Operations Course

Course Code: PSTRCOTM01

Prerequisites: None

Duration: Two (2) days

Enrollment: Ten (10), maximum

Locations:

- Gilat/RAS Customer Educational Centers (Petach Tikva, Israel)
- Customer site

Course Overview:

The RaySat one-way Antenna Installation and Operations Course is aimed at antenna integrators, end users and anyone who wants to learn how to install, configure, and operate the RAS one-way antenna.

Participants will learn about the theoretical and operational aspects of RAS phased-array antenna technology. The course also includes hands-on workshops and exercises, enabling participants to practice equipment installation, configuration, and operations, and to perform basic troubleshooting.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe the principles of RAS one-way antenna operation
- Describe the antenna's connections
- Understand the antenna's electrical requirements
- Perform mechanical installation
- Connect and configure the antenna controller
- Perform basic troubleshooting for the antenna installation



22. RAYSAT (RAS) TWO-WAY ANTENNA INSTALLATION AND OPERATIONS COURSE

Course Name: RAS Two-Way Antenna Installation and Operations Course

Course Code: PSTRCOTM02

Prerequisites: Basic satellite communications background

Duration: Three (3) days

Enrollment: Ten (10), maximum

Locations:

- Gilat/RAS Educational Centers (Petach Tikva, Israel)
- Customer site

Course Overview:

The RAS Two-Way Antenna Installation and Operations Course is aimed at antenna integrators, end users and anyone who wants to learn how to install, configure, and operate a RAS Two-Way antenna. Participants will learn about the operational and practical aspects of RAS Phased-array antenna technology.

The course includes hands-on workshops and exercises, enabling participants to practice equipment installation, configuration, and operations, and to perform basic troubleshooting.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe the principles of operating the RAS 2-way antenna
- Describe RAS 2-way antenna connections
- Understand the antenna's electrical requirements
- Perform mechanical installation
- Connect and configure the antenna controller
- Perform basic troubleshooting for the antenna installation



23. GLT/MLT INSTALLATION AND OPERATIONS COURSE

Course Name: GLT/MLT Installation and Operations Course

Course Code: PSTRCOTM07, PSTRCOTM08

Prerequisites: NET 101, or previous networking experience

Duration: Two (2) days

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Education Center, (Petach Tikva, Israel)
- Customer site

Course Overview:

The GLT Installation and Operations Course is aimed at any technical personnel who want to know how to operate and perform basic troubleshooting for the GLT/MLT. Participants will learn the theoretical and operational aspects of GLT/MLT technology.

The course includes hands-on workshops and exercises, enabling participants to practice GLT/MLT equipment installation, configuration, and operation.

Course Objectives:

Upon completing the course, participants will successfully:

- Describe the principles of GLT/MLT modem operation
- Describe GLT/MLT modem connections
- Understand GLT/MLT modem electrical requirements
- Perform GLT/MLT modem installation
- Connect and configure the GLT/MLT modem
- Perform basic troubleshooting for the GLT/MLT modem
- Learn how to manage and control the GLT/MLT modem via SNMP



24. MCPC HUB OPERATIONS COURSE

Course Name: MCPC Hub Operations Course

Course Code: PSTRCOTM09, PSTRCOTM10

Prerequisites: NET 101, or previous networking experience

Duration: Three (3) day

Enrollment: Ten (10), maximum

Locations:

- Gilat Customer Education Center, (Petach Tikva, Israel)
- Customer site

Course Overview:

The MCPC Hub Operations Course is aimed at any technical personnel who want to know how to operate and perform basic troubleshooting for the MCPC Hub. Participants will learn the theoretical and operational aspects of MCPC technology.

The course includes hands-on workshops and exercises, enabling participants to practice the MCPC Hub equipment installation, configuration, and operation.

Course Objectives:

Upon completing the course, participants will successfully:

- Describe system components and associated functions
 - Describe the principles of GLT/MLT modem operation
 - Describe GLT/MLT modem connections
- Describe system principles of operation
- Identify Hub components
- Install, configure and troubleshoot a terminal
- Configure and troubleshoot hub components
- Describe NMS architecture and GUI functions
- Backup and restore NMS database parameters
- Perform NC switchover
- Describe and perform basic configurations of:
 - QoS
 - IP Features



25. ANTENNA & RFT EQUIPMENT OPERATIONS BASIC COURSE

Course Name: Antenna & RFT Basic Operations

Course Code: PSTRRF01, PSTRRF02

Prerequisites:

- Basic RF and Satellite Communication background
- In case of lack of the required background, Gilat offers one (1) additional day of Basic Satellite Communication, which can be provided as a frontal lecture or a webinar

Duration: Three (3) days

Enrollment: Three (3) minimum, Ten (10) maximum

Locations:

- Gilat Customer Educational Centers, Petach Tikva, Israel
- Customer site

Course Overview:

The "Antenna & RFT Equipment Operations Basic Course" is aimed at any technical personnel who want to learn the theory of operation of antenna and RF equipment. The course guides the students through the installation, configuration, operation, and basic troubleshooting.

The course includes hands-on workshops and exercises, enabling participants to practice RF components' installation, configuration, and operation.

Course Objectives:

Upon completing the course, participants will be able to:

- Describe the principles of RF components' operation:
 - Hub antenna
 - ULPC
 - 1:1 HPA System
 - 1:1 LNB System
 - Beacon Receiver
 - RF #Component
- Describe antenna and RF components' connections
- Perform installation and configuration of RF components
- Perform basic troubleshooting for RF components



26. ANTENNA & RFT EQUIPMENT OPERATIONS ADVANCED COURSE

Course Name: Antenna & RFT Advanced Operations

Course Code: PSTRRF03, PSTRRF04

Prerequisites: Participants must first complete the Antenna & RFT Equipment Operations Basic course **or** be familiar with basic operation of the antenna and RFT

Duration: Three (3) days

Enrollment: Three (3) minimum, Ten (10) maximum

Locations:

- Gilat Customer Educational Center, Petach Tikva, Israel
- Customer site

Course Overview:

The "Antenna & RFT Equipment Operations Advanced Course" is aimed at any technical personnel who want to extend the expertise in RF measurements and testing / troubleshooting using a spectrum analyzer and a power meter.

The course includes hands-on workshops and exercises, enabling participants to practice RF measurements using the RF test tools.

Course Objectives:

Upon completing the course, participants will be able to:

- Measure and test RF signals at:
 - Hub antenna
 - Tx chain components
 - Rx chain components
- Identify the root cause of a problem
- Confirm a problem using RF tools
- Perform in-depth troubleshooting for RF components



TRAINING CATALOGUE

GILAT SATELLITE NETWORKS
www.gilat.com

