

Online interactive course GVF 503i

iDirect Remote Terminal Installation



Intensive iDirect-Specific Training

In a highly explanatory, self-paced tutorial environment, this course takes the student through a step-by-step installation process using simulations of the real-world behavior of satellite links, the iDirect VSAT hardware and software, and typical installation test equipment.

The course is appropriate for all installers and field technicians who may be responsible for activating iDirect terminals, as well as NOC technicians and support staff who interact with field technicians or simply need a solid introduction to iDirect networks.

Certification

On-line certification training endorsed by iDirect Technologies is available exclusively from the Global VSAT Forum. Students who complete GVF503i, along with the prerequisite online fundamentals courses and the GVF hands on skills test, will receive the GVF iDirect Remote Terminal Installation Specialist Certification and are eligible to be listed in GVF's public database of certified field technicians.

Azimuth peaking

We are now close to the satellite, but locking the coarse azimuth probably moved the beam. Click the green NEXT button to step through the procedure for peaking with the fine azimuth control.

- Loosen the fine azimuth locks.
- Back off the forward az adj nut by about 5 turns.
- Look for the signal by scanning CCW (rear adjuster).
- Back off the rear az nut by about 10 turns.
- Find the peak by scanning CW (forward adjuster).
- Back off the forward adjuster.
- Return to the peak, scanning CCW (rear adjuster).

Turning this nut clockwise rotates the beam counter-clockwise (towards the east). We did not find the satellite after about 3 turns, so we must have gone the wrong way.

Practice dish pointing skills with the iDirect-specific hands-on simulator.

Time Division Multiple Access (TDMA)

TDMA is a scheme for many VSATs to share one "inbound" carrier channel by taking turns transmitting.

Data streams coming from the VSATs

Each VSAT transmits in bursts, according to a schedule assigned by the hub.

Bursts arrive at the hub on the same channel, interleaved in time.

Packets arrive at the VSAT at varying times and rates.

Demultiplexer separates all the data packets from the receiver, according to their addresses

HUB STATION

Learn how the iDirect TDM/TDMA system dynamically manages bandwidth.

Cross-pol alignment

If the two horns are not correctly aligned, the signals will be mingled at the outputs of the receiving horn.

Vertical pol transmit signal

Horizontal pol transmit signal

Desired signal

Interference

Vertical pol

Horizontal pol

Desired signal

Interference

Polarization Control

0° Vertical

90° Horizontal

180° Vertical

-90° Horizontal

Try adjusting the transmit horn polarization angle to minimize the interference at the receive horn.

Note how sensitive it is!

Understand the importance of cross-pol signal separation by experimenting with antenna feed adjustment.



Global VSAT Forum
The association of the global satellite industry.

Visit online:
www.gvf.org



SatProf, Inc.
Animated, interactive technically-accurate online training for satellite professionals.

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www.satprof.com

GVF Certification

GVF's award-winning VSAT Installation Certification training program is delivered via a combination of online, interactive, simulator-driven training modules developed by SatProf, Inc. (www.satprof.com) and formal hands-on skills testing, all managed through the GVF training portal at <http://gvf.coursehost.com>. Hands-on skills testing and supplementary classroom sessions are supported by GVF Instructors and Regional Training Centers located in every major region of the world.

GVF 503i Course Specifications

Summary: Detailed iDirect theory and step-by-step procedures. Factory-authorized training in the detailed knowledge and skills required for installation of iDirect iNFINITI series remote VSAT terminals. Animation and simulator-based interactivity are used throughout the course to explain critical skills and concepts.

Certification: Students who pass this course and hold GVF Advanced VSAT Installer Certification will receive the GVF iDirect Remote Terminal Installer Specialist Certification.

Prerequisites: GVF 510, 520, and 521, or GVF 501 and 502.

Duration: Contains over 200 animated & interactive pages, requiring 5-15 hours study. Includes review quizzes and final test.

Reference materials included: Students may download and keep the exclusive SatProf "Field Handbook for iDirect," in addition to various iDirect manuals and guides.

Delivery: Animated & interactive HTML/Flash, self-paced, on-line format. Requires Internet access while studying the course material. High speed access is preferred but is NOT required. Student's computer must be capable of running the Adobe Flash player, version 10.

Contents:

1. **Introduction.** Using the learning system; GVF certification process; reference documents; iDirect non-disclosure statement.
2. **Working with customers and iDirect.** About iDirect products and networks; NOC's; who installers work with.
3. **iDirect Network Architecture.** TDM/TDMA, SCPC, start, and mesh modes. Encryption.
4. **iDirect Remote Equipment Overview.** Block diagram. IDU connections and indicators. Outdoor equipment. Antennas.
5. **Files and Parameter Downloads.** Configuring with iSite. Downloading firmware. The OPTIONS file.
6. **iSite;** Functions, installation, and tour of the iSite utility.
7. **Transmitter Distortion Concepts.** Saturation, compression, and expansion. Distortion spectrum on spectrum analyzer simulator. Uplink control and fade compensation. Measuring and setting the MAX POWER parameter.
8. **Installation Procedure overview.** Major steps of the installation process.
9. **Installation Step 1 (Preparation).** Information to gather. Using inclinometer. Compass technique. Offset angle. Site survey.
10. **Installation Step 2 (Outdoor eqpt assembly).** Ballast. Waveguide flanges. OMT ports. How to assemble the system.
11. **Installation Step 3 (Installing the IFL).** Coax cables. Voltage drop. Approved connectors, cables, and lengths. Attaching crimp connectors to RG-6 and RG-11.
12. **Installation Step 4 (Installing the IDU).** Serial connection. Find IP and set address. Connect with iSite. Download OPTIONS file.
13. **Installation Step 5 (Receive signal pointing).** Configure iSite and meter for pointing. Using the iSite pointing graph. Pre-set polarization. Find the satellite and peak accurately (simulator exercises).
14. **Installation Step 6 (Uplink alignment).** Activate CW test signal. Align cross pol. Find MAX POWER.
15. **Installation Step 7 (Joining the network).** Contact the NCC. Confirm activation.
16. **Installation Step 8 (Finishing the job).** Test user interfaces. Weatherproofing. Customer sign-off.
17. **Grounding and Safety.** Electrical, RF, and discharge protection grounding.
18. **Troubleshooting.** Console commands. Cable tests. Sample problems and solutions.
19. **Advanced topics.** Adding receivers. Console mode pointing. Mobile applications. Automatic beam selection. Mesh mode. iSCPC mode.
20. **Final test.**



Global VSAT Forum
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global VSAT industry.
www.gvf.org

For further information, fees, schedules,
and to register for this and all GVF
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