

# Line & Antenna Sweeping Certification Training



## A "SWEEPING" Success

Field technicians, engineers, and communication system operators all work toward the same goal - keeping their systems operating and their customers satisfied. Communication networks are experiencing unparalleled change and growth, and with that growth the need for trained technicians and engineers as well as managers, operators and owners becomes critical. Bird® Technologies Global Educational Services offers specialized training for all of its Site Analyzer® (SA) family of products as well as other products, such as Anritsu Site Master®.

The training is useful for installers and maintenance technicians troubleshooting even the most complex antenna and feed line systems. The frequency domain reflectometer (FDR) provides sweep and match data, showing VSWR, Return Loss, or Cable Loss (Insertion Loss) depending upon the users preference, as well as distance to fault measurement for system repair and maintenance.



## Training Agenda (2 Days)

Topics include basic RF theory, site overview and operation, equipment set-up and use, test and measurement of feed line and antenna system characteristics, and documentation and report analysis. The course is designed to accommodate user's across a variety of applications.

## Course Structure

A full class outline and schedule are included, but much of the training centers on a practical, real-world approach to line sweeping and distance to fault measurement. Class time will include hands-on use of the Site Analyzer® or Site Master® with equipment that would be installed on site. Troubleshooting and distance to fault measurement will be used to find faulty and failed equipment. Training may be customized to fit the needs of those attending.

# Line & Antenna Sweeping Certification Training

## Who should attend training?

Cell Site Manager	Site Installers
Site Technicians	Cell Carriers
Field Engineers	Construction Companies

## Topics covered in training

Practical radio frequency basics
Typical site set-up and installation practices
Fundamental line sweeping techniques
The impact of system parameters on proof of performance
Fault location and correction using DTF
Documentation of faults and correction
Product Comparison

## Material Supplied

Course materials  
Students are encourage to bring their own test equipment regardless of manufacturer.

## Instrument Certification

Upon completion of training, each participant will receive a Line and Antenna sweeping certification, issued by Bird® Electronic Corporation, that shows the participant has acquired the skills and understanding to successfully operate the FDR under the field conditions covered by the course. The Certification will require attendance at lecture sections and participation in hands-on practical applications. Testing of knowledge and skill will be part of the certification process.

## Certification Standard

Written Exam  
Lab Practical Exam  
(Must pass written & LAB practical exam)  
ETA Certification includes the same requirements and is available at the time the class is given.

*"3 of my people attended and they said it was one of the best training classes they've ever attended. They all had nothing but outstanding things to say about the instructor and the course content"*

Glen Sparks  
Cingular Wireless

## Course Outline

### Day 1 Morning Session

Introduction: Bird® Site Analyzer® / Anritsu Site Master®	• Models and features
Radio frequency basics	• Cell site use of radio carriers • Transmission lines • Connectors, clamps, and weatherproofing
Losses in cell site systems	• Return loss and Insertion loss
Line sweeping in cell and other applications	• Related fields • Line sweeping explanation • Line sweeping techniques Installation and periodic maintenance

### Day 1 Afternoon Session

Review of morning session	
Applications	Buzzwords and Technology
Comparison with similar products	
Hands-on experience using Site Analyzer® or Site Master®	Button-ology Use of field equipment and products
Troubleshooting techniques	Distance to Fault techniques Return Loss and Insertion Loss
Review and Q&A session	

## Course Outline

### Day 2 Morning Session

Interpreting and saving test results/sweeps
Diagnosing and correcting faults
Additional hands-on experience

### Day 2 Afternoon Session

Review of software	
Q&A session	
Certification - Bird Certification or ETA Certification	Written Exam Lab Practical Exam

Notes:  
Course materials and content will be based upon attendees knowledge and experience. Fee structure discussed upon contact. Course fee includes all materials, lunches, and refreshments during the training days. Travel expense and hotel not included in fee.

To enroll contact Pat Galaska, 440-519-2347, ges@birdrf.com

Site Master® is a registered trademark of Anritsu Company and is not owned or affiliated in any way with Bird® Electronic Corporation. This certification is not sponsored by Anritsu Corporation.



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