Advanced Antenna Line & PIM RF Analysis Course

On-Site Training | Duration: 3-Days | Minimum: 8 Seats | Maximum: 12 Seats

This workbook-based manufacturer neutral course focuses on RF fundamentals, composite power, PIM, and the analysis of complex coaxial antenna systems and their related components. It is commonly taken in conjunction with our 1-day course Spectrum Analysis, PIM & Interference RF Course (0300-00671-EN), which provides the necessary background on spectrum analyzers and/or receivers to locate and resolve external interference. Both courses have an optional online certification. We will challenge the most seasoned individual regardless of experience and/or past training. Topics for this course includes an in depth look at RF fundamentals, testing common RF components and antenna systems, common PIM signatures, and locating internal and external PIM (using DTP and/or RTF). Course contains multiple labs and the potential for a field exercise.

Target Audience

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<thead>
<tr>
<th>Wireless Carriers</th>
<th>X</th>
<th>RF Engineers</th>
<th>X</th>
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<tbody>
<tr>
<td>Public Safety</td>
<td>X</td>
<td>Entry Level Technicians</td>
<td>X</td>
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<tr>
<td>Military/Government</td>
<td>X</td>
<td>Advanced Technicians</td>
<td>X</td>
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<tr>
<td>Contractors</td>
<td>X</td>
<td>Management (Technical)</td>
<td>X</td>
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<tr>
<td>Manufacturers</td>
<td>X</td>
<td>Non-Technical</td>
<td>X</td>
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Recommended Prerequisites

None.

Objectives

1. Explain and demonstrate how to setup your test equipment to perform and analyze return loss, DTF, and insertion loss/gain measurements on systems and components.
2. Explain common PIM signatures.
3. Explain how to calculate ERP and EIRP.
4. Explain and demonstrate how to locate PIM sources using DTP and/or RTF.
5. Have a firm understanding of RF Fundamentals and how to apply them when troubleshooting.

Outline

1. RF Fundamentals
2. Composite Power
3. 1-Port & 2-Port Calibrations
4. Antenna Systems with Multiple Filters
   4.1. Return Loss
   4.2. Distance-to-Fault (DTF)
   4.3. Insertion Loss & Gain
   4.4. ERP & EIRP
5. Passive Intermodulation (PIM)
   5.1. dBc vs. dBm
   5.2. Harmonics & PIM Products
   5.3. Common PIM Signatures
   5.4. PIM/Time vs. Swept PIM
   5.5. Locating Internal & External PIM (using DTP and/or RTF)

Course Customization Form

Classroom and field exercises, frequencies and signals, and test equipment can be customized for this course. This can include test equipment applications specific to a customer and market, such as interference mapping. Form is on a private online link and completed prior to training.